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*Yours Truly,
T. J. Miller.*

The American Cotton System Historically Treated

SHOWING OPERATIONS OF THE
COTTON EXCHANGES

ALSO

Cotton Classification

WITH

Numerous Practical Domestic and Foreign
Commercial Calculations

Tells What You Want to Know

By T. S. MILLER, Sr.

ILLUSTRATED



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AUSTIN, TEXAS



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By **T. S. MILLER, SR.**



PREFACE.

It is evident that beyond the limits of his own environments the average cotton grower is unacquainted with the manner in which his cotton finds a market; that text books enlightening him are wanting; that experience alone can not teach him the exact character and quality of the cotton produced on his farm, the process of marketing, the practical definition and application of future contracts to spot markets, how to ascertain the value of relative grades, and to make the calculations requisite to the transaction, whether sold at home or in foreign markets, and to render clear the meaning of all the technical expressions common to the cotton trade are some of the manifold purposes of this volume.

Realizing that a work of this kind, setting forth as clearly as possible the way in which cotton is bought and sold, how the banking interests of the country are instrumental in handling and assisting in the movement of cotton as a co-related force, is not only desirable but absolutely necessary and will enable any student of cotton to be educated along the lines demanded by the peculiar cotton conditions in the South today.

Cotton classification and calculations determining the value of the different grades of cotton have usually been confined to those directly interested in the trade, and has rendered this source of information principally in the hands of a few, while the

public has given little thought to this essential study.

To delineate the facts connected with the cotton trade, stating the good and evil alike, without minimizing or exaggerating has been a determinate feature of this work.

The history and development of the cotton plant has been previously written in detail by numerous writers, but a brief sketch is inserted here for the purpose of placing this data in condensed form for convenient reference.

While "the half has not been told," the amount and character of matter placed at the disposal of the student, is presumed to give him a clear and comprehensive explanation of the manner in which the great American cotton crops find a market.

A large portion of this volume is drawn from the author's own personal experience from practical work in the cotton market, though in a limited way, covering a period of something near fifteen years, during which time he has been a close student of the cotton question in all its intricate details, seeking through every available source, reliable information and data that could be construed as suitable and worthy to be perpetuated and is herein presented to the studios who are interested in cotton.

To the thousands of operators in the South who have a fair practical knowledge of classification, but who are not fully conversant with cotton calculations, this work will have a special value.

It is thought advisable to give solutions of a large number of mathematical problems, from the sim-

plest to the most abstruse as the intention of the work is to be practical and easy of reference.

The problems are original, practical, covering such ground as will be found useful to the cotton grower, dealer, large or small, as well as the exporter.

The problems detailing processes used by operators dealing extensively in domestic and foreign cotton, are inserted to acquaint those entirely unfamiliar with such operations.

Finding the average grade by the use of the sixteenth or 6 1-4 point method is here introduced, the author believes, for the first time in print, and will prove both novel and instructive. The results to be gained by this method, while not absolutely correct, are sufficiently near to be practical, and is a method used almost entirely by operators everywhere. Its beauty lies in the fact of its close approximation to accuracy and its brevity in operations, rendering the averaging of large lists of cotton quite as easy as small ones.

Agriculture as a supplemental branch of study is now being introduced in the primary schools of the country, and especially in Texas, the *Arithmetic of Cotton* as a special chapter of this volume should appeal to every teacher in this State and the entire South; in fact, to all directly or indirectly connected with cotton, whether grower or dealer, who does not understand cotton calculations.

Teachers desiring to introduce cotton calculations into their schools as an auxiliary study should secure at least five grades of cotton from some cotton buyer or classer in their county, to be used in con-

nection with the calculations, that this class of work may be better exemplified to the pupils.

It is suggested that the grades, low middling, strict low middling, middling, strict middling and good middling be secured as the best types for easy representation. Such practical work in the school room should prove interesting and instructive.

The author is deeply indebted to Hons. R. L. Henry and A. S. Burleson for literature furnished by them; for information covering the utility of the Cotton Factor as an element in the cotton trade his thanks are due Mr. Dan Kempner, Galveston, Texas; he wishes, also, to thank Mr. W. J. Neale, Waco, Texas, for kindly reviewing the chapter on Buying and Selling Spot Cotton; he appreciates the kindness of Messrs. S. C. Alexander & Co., Pine Bluff, Ark., in giving their definition of "*Bender Cotton*."

Concerning the "inner workings" of the New Orleans Cotton Exchange he is appreciatively grateful to Messrs. Haywood & Clark, members of that exchange; for literature in defense of the New York Cotton Exchange and statistics he gratefully acknowledges the courtesies of Messrs. Latham Alexander & Co., members of that organization; for assistance in giving information regarding the handling of American cotton in European countries, he desires to thank Mr. Anton Guenther, of Bremen, Germany, for data fully explanatory furnished by him.

Other helpful sources from which materials have been drawn and for which due credit is given are indicated in the following:

Prescott's "American Encyclopedia"; "Encyclopedia Britanica"; "Book of the United States";

"Cotton Movement and Fluctuation," Latham Alexander & Co.; Watkin's "King Cotton"; "United States Dispensatory" edition 1873; Pereira's "Materia Medica," edition 1854; Maury's Geography.

Crop Reporter and Annual Year Book of the United States; Census Bulletins of the United States Agricultural Departments, kindly furnished by Mr. S. N. D. North; Consular Reports and Reports of the Commission of Corporations on Cotton Exchanges; Constitution and By-Laws of the New York, New Orleans and Bremen Cotton Exchanges.

In submitting this volume to the public the author is fully aware of its imperfections and desires that all criticisms be addressed to him that he may amend or correct in subsequent editions.

THOMAS SOUTHWORTH MILLER, SR.

Flat, Texas, November 8, 1909.

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DEDICATED
to
My Wife,
Ida Bruce Miller
as a
TOKEN OF LOVE AND AFFECTION
and
For her Valuable Assistance
in Compiling this Work



CHAPTER I.

COTTON

ERRATA.

Foot note on page 62 should read page 193.

Asterisk on page 101 should be at end of last line of second paragraph.

Answer

to problem	4,	page	177	should be	\$147.84
"	"	7,	" 179	" "	\$34.45
"	"	8,	" 180	" "	\$515.32
"	"	5,	" 188	" "	\$132.79
"	"	4,	" 210	" "	\$1082.87½
"	"	13,	" 213	" "	\$4.76+
"	"	16,	" 213	" "	\$70.37½
"	"	9,	" 265	" "	113,293.04+ yen
"	"	5,	" 256	" "	\$3896.14+
1 G.M. in "	3,	"	223	" "	2 G. M.

Eighteenth line, page 272, sixth word should be 241.

Ninth line, page 278, third word, should be 4.80 (exchange rate).

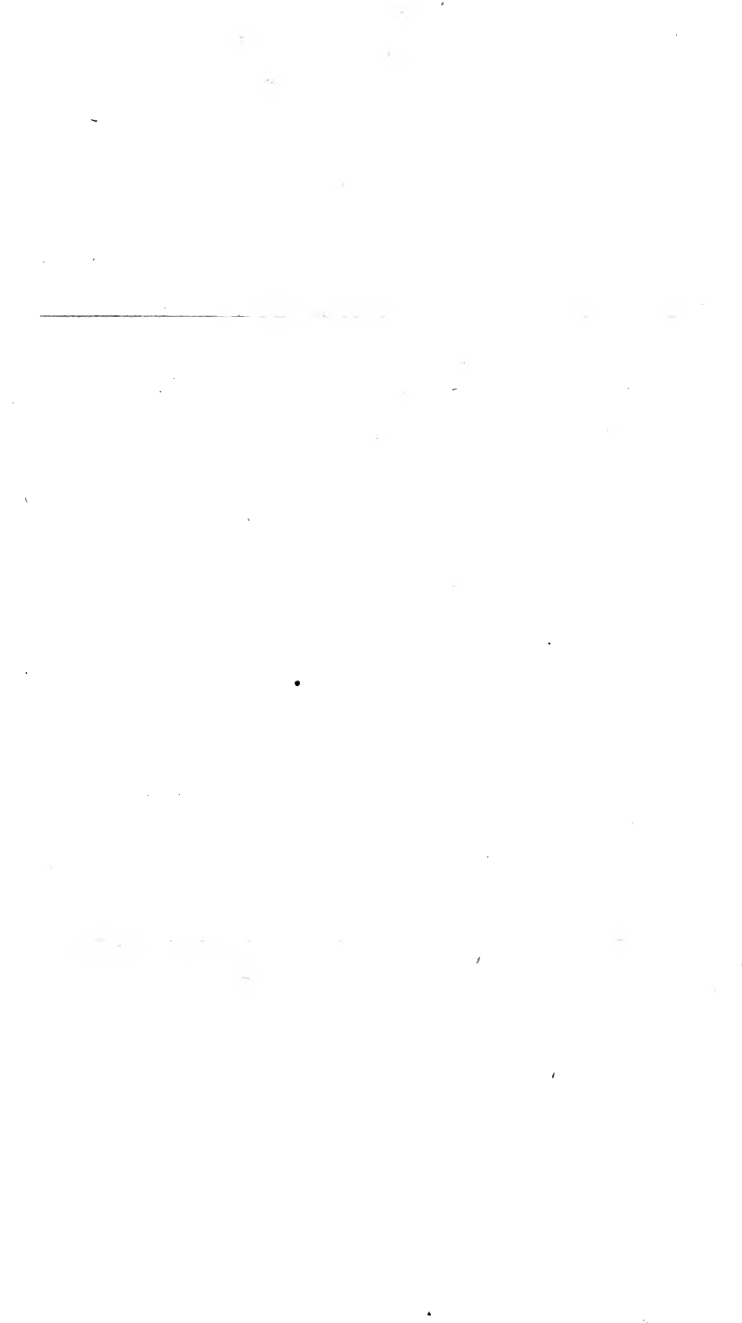
Twenty-fourth line, page 280, second word, should be 4.93 pence.

The author regrets the appearance of these errors—they will be corrected in subsequent issues.

stare apprehensively, when its limbs are laden with fruit, they beam with delight and a consolation pervades every artery of trade, knowing that a new fabric for the use of mankind can soon be made.

This plant, which supplies the raw material for one of the great industries, and for the clothing of all nations, may be ranked as one of nature's most valuable gifts to mankind.

From the shadows of the remote past, no definite





CHAPTER I.

COTTON.

As an agricultural product, an article of commerce and revenue, cotton stands pre-eminent in the minds of the agriculturist of the South. It is to it he looks to lift his mortgage, pay his debts, build his home, improve his farm, clothe his family, provide for his household, school his children and secure a bank credit, but to some or all of these, he is often confronted with disappointment, owing to the many jeopardizing influences that attack the cotton plant, assail the cotton market and minimize his efforts.

HISTORY.

It is natural that we should wish to know something of the origin and history of the plant that wraps the human race, moves the wheels of commerce and controls the finances of a nation, when whose leaves wither, the eyes of a financial world stare apprehensively, when its limbs are laden with fruit, they beam with delight and a consolation pervades every artery of trade, knowing that a new fabric for the use of mankind can soon be made.

This plant, which supplies the raw material for one of the great industries, and for the clothing of all nations, may be ranked as one of nature's most valuable gifts to mankind.

From the shadows of the remote past, no definite

knowledge has come down to us, as to who first mentioned cotton. That the ancients were familiar with its uses before the Christian era is certain, and is quoted by nearly all writers on the subject in modern times.

Herodotus, the Greek historian, who lived in the fifth century B. C. makes particular note of this plant in India, comparing the beauty and usefulness of the "fleeces of its fruit" as surpassing that of "lamb's wool," and from which the people were clothed.

Pliny mentions it, and, also, a cloth (Xylina) made from its fiber, yet its history, like that of ancient Greece, has a Fabulous Period, so interwoven with fable that its identity is almost lost in stories told by over credulous travelers, in oriental countries.

Authentic history finally relegated to the pages of mythical lore all the impractical and untrue attributes of this truly wonderful plant, and we find that cotton was grown in India, for the making of clothing, at a very early period, from thence it probably found its way to China, next to Persia and afterward to other countries; that it was known and cultivated in Egypt, at a period almost as early; and that, when the Americas were first explored, the natives were found to be accustomed to the cultivation of cotton and its manufacture into cloth.

Cotton is, therefore, indigenous to all tropical and semi-tropical regions of the world, though, a higher state of development is reached where soil and climatic conditions are most congenial, and where proper tillage fosters its growth.

BOTANICAL CHARACTERISTICS.

Gossypium:

The chief botanical types are: 1 Gos. Barbardense; 2 Gos. Herbaceum; 3 Gos. Hirsutum; 4 Gos. Arboreum; 5 Gos. Peruvianum. (See Encyclopedia Britannica.)

Botanically, cotton is classed in the natural order Malvaceae,* under the name *Gossypium*,—this name (*Gosypion*) having been given it by Pliny, though his reason for so doing has never been fully understood.

This genus, *Gossypium*, has caused much perplexity and diversity of opinion among botanists, owing to the facts that the plant is susceptible to changes caused by climatic conditions, soil and cultivation; also, the more eccentric changes known as “sports,” which leave the genealogy of the different species still involved in doubt. Linnaeus admitted five species, while other subsequent botanists have recognized four or five times as many.

Professor Parlatore in his description of the cottons he had seen growing in Italy was led to the conclusion that there were only seven species of cotton, all others being varieties.

While De Candolle, Dr. Royle, Schwartz and others, particularizing admit a different number of original species, it is probable, that the cottons of the Old and those of the New World constitute the real typical divisions known to commerce—these are the Eastern and Western, the Indian and American cottons.

*Order of the common Mallows.

The botanical characteristics of the two, while in a degree are similar, yet are sufficiently marked so that the one can not be mistaken for the other.

The seed of the Eastern plant is never black or naked, while many varieties of the Western plant are conspicuously so. Numerous varieties of each type are to be found constituting distinct races of the same species, which augmented by the industrious bees and other insects with their pollenizing visits, affords ample scope for the origination of apparently new cottons, the character of which are so pronounced as to good qualities or want of them, that careful experimenters desiring to improve the one or to destroy the other, have ample opportunities along this line of endeavor.

All of the Eastern varieties belong to the species designated by Linnaeus, yet are clearly distinguishable from each other, with one exception, and that is the single purple blossomed tree cotton, indigenous to the lands bordering the Indian Ocean; the *Gossypium Arboreum* of Linnaeus; the Deo Cotton held sacred by the Hindus. This plant or tree has dark green leaves, red-purple blossoms and produces a silky fiber, which is used for making priestly vestments alone.

Attempts have been made to hybridize this cotton and bring it into general use, but so far without success and it remains commercially unknown.

WESTERN OR AMERICAN COTTONS.

In 1519 when Cortez first essayed to visit the great Montezuma in his capital city of Mexico, he

was presented with a princely gift of immense value, a part of which "consisted of loads of finely wrought cotton," and when the Spaniards were finally received into the royal presence, **"attendants strewed the ground with cotton tapestry that his imperial feet might not be contaminated by the rude soil."* The cotton hangings in their quarters were the wonder and admiration of these adventurous soldiers. The common people wore cotton shirts and Montezuma's "great square cloak made of finest cotton and sprinkled with jewels," still lives in the pages of his chroniclers.

From early records it will be seen that cotton was grown abundantly in Mexico previous to the advent of the Spaniard there, and its uses and manufacture were well understood by the Aztecs, that the **Indians roaming over the undulating prairies of Texas were blanketed and clad in garments of cotton, and that this plant was, also, "found growing wild in Florida and elsewhere in the South," it is not assuming too much for America to assert that cotton is indigenous to the Southern portion of this continent.

The cottons which have become known to the civilized world since the discovery of America, consists of two great divisions. The *G. Barbadosense*, a black-seeded variety with its "pure yellow blossoms" and the *G. Hirsutum*, or "hairy cotton" bearing "white or faintly primrose-colored blossoms."

*See Prescott's American Encyclopedia, page 427.

**Watkin's "King Cotton," page 10.

The two are not always readily distinguished from each other by the appearance of the seed, as the black-seeded varieties occasionally show seed which have tufts of fiber at one or both ends, and in some instances completely covered with fuzz, and the fuzzy kind many times show black or naked seed predominating to a more or less extent, and on this account some authorities conclude that the two varieties belong to the same species. Carefully conducted investigations have shown, however, that the variations in the seed may be attributed to the peculiarities of soil, of climate and cultivation, and that the specific characteristics of the two classes remain distinct after generations and generations.

The cottons mostly in demand and sought after by manufacturers of today, are those of the Western Hemisphere, designated as Sea-island and New Orleans or Uplands, or long and short staple. Two varieties not equalled by any other like products of the world.

SEA-ISLAND COTTON.

G. Barbadense—Sea-Island Cotton—is said to have sprung from G. Arboreum* in Persia, and was carried to Barbadoes from India, though the name would seem to imply a Barbadiansian origin. From the island of Anguilla in 1785 to Bahama Islands, it was brought to the United States in 1786 where it was first grown on St. Simon's Island which is now a part of Glynn County, Georgia. The culture and improvement of sea-island cotton were greatly aided

*This origin is doubtful, but more likely from Barbadoes.

by the efforts of *Kinsey Burden and wife of Colleton County, Georgia, who, by careful selection of the black seed produced the best varieties now grown in the United States.

The islands lying off the coast of Georgia and a few interior counties, some portions of Florida and South Carolina furnish a home in which the Sea-Island varieties attain their greatest perfection. The cultivation of this cotton in the United States is now principally confined to about sixteen counties in Florida, twenty-nine in Georgia, and four in South Carolina, while these particular counties grow this kind of cotton, not all of their areas are given to its culture, but only those parts more particularly adapted to its perfect development, where frost is scarcely known and where it has surpassed all other cottons for length, strength and beauty of its lustrous staple, a single pound of which could be spun into a thread more than 1000 miles in length. This fiber is much in demand by manufacturers whose fabrics require a long staple cotton, though, it is now closely approached by some hybridized varieties of long staple up-land cotton originated in Mississippi.

Farmers who grow Sea-Island cotton in the interior counties, necessarily secure new seed, as a means of preserving the identity of the original pa-

“*In 1790 the first commercial quantity of this cotton was grown by William Elliott, on the land where Jean Ribault landed his first colonist and claimed the country for France.”

*Cotton production, 1907. Bulletin 95, page 19, Dept. Com. and La., B. of C.

rental stock, as the fiber degenerates rapidly into that of short staple up-land.

Efforts have been made to grow this cotton in many parts of the Southern States, but results have been so unsatisfactory that experiments in this direction have almost ceased.

Frequent attempts to grow this cotton have been made in Texas, the first effort in 1878 resulted in 202 bales of fairly good staple being gathered. Annually thereafter some twenty bales were grown, until 1884, when the production shrank to only eleven bales, then ceased until 1895, when seed was again secured from Savannah parties, from which a crop of 991 bales were reported; in 1896, 2,597 bales, in 1897, 10 bales and in 1899, 6 bales, the last year reported.

The increasing demand for long staple cotton has induced many progressive farmers and others interested in producing long staples, to experiment in many ways with upland varieties, to produce a better and longer fiber, chief of which is in seed selection, better and more scientific cultivation, and proper fertilization.

Sea-Island cotton has been successfully introduced into Queensland, the Fiji Islands, Tahiti and Egypt, but the results accruing therefrom have not been of sufficient magnitude to affect the cotton trade to any appreciable extent.

LONG STAPLE UPLAND COTTON.

The Bureau of Plant Industry of the United States Department of Agriculture, has been and is now giving much valuable assistance in directing the grow-

ers attention to practical and scientific culture of the cotton plant with a view of more particularly developing better staple varieties, and improving those now cultivated.

The long staple uplands grow principally in the lower portion of the Mississippi valley, and by careful seed selection of these fancy varieties, and more intelligent cultural methods, satisfactory results have been shown.

As most all the American long staple uplands are ginned by saw gins, the fibres are badly cut and broken, making uneven lengths rendering the growers' efforts unsatisfactory to a great extent, while Sea-Island and Egyptian cottons are treated by roller gins which give a regular and more uniform fiber.

Stimulated by offerings of fancy prices for long staple cotton, with the assistance of the National and State Agricultural Departments augmented by individual efforts, no doubt a variety suitable to all climates and soils of the Southern States will be developed to that extent its growth will become universal, and roller gins will be erected independently or attached to those in operation at all points necessary to the better care for this class of cotton.

From the gratifying success attained on the fertile Mississippi valley lands, from which upland seed have been distributed to many other points, some even to remote distances, equally as good quality of cotton has resulted from the planting of these seeds.

A different character of cotton from that just described but seemingly confined to the limits of the State of Arkansas, whose staple is strong, heavy, of

good body, pulling full 1 1-8 inch frequently, and known as "Bender cotton" or Benders from the fact of its growth apparently being indigenous to the very rich lands of that State bordering the rivers, especially the areas partially enclosed in the river bends, but as to the true history of the origin of this variety of cotton, the efforts of the author to trace it beyond the "river bend" idea have been without success.

SHORT STAPLE WESTERN COTTON.

Of the short staple or Western variety of cotton, little is known of its origin though it is quite probable it came from Mexico, and of this class we can with certainty recognize two distinct types; one with green seeds and a hardy constitution, the other with white, tawny, or grayish seeds, showing a staple longer and distinctly silky in texture; these two types are the principal productions of the United States and are known in England and in European markets as "American Cottons."

While the two classes enumerated constitute the principal ones, there are others so closely allied that it is quite difficult to clearly distinguish them as separate species, but showing so marked features for the one or the other class as to be more or less akin. Of the grayish-seed variety, two kinds are found, one with a small seed, while the other is very large, and the same may be said of the green-seeded plant, also. The fine Venezulean and West Indian cottons belong to this latter class.

A variety supposed to have originated in Cuba, making in suitable soil and climate a fine showy

plant, is often found growing spontaneously with other cotton, producing a brown or yellow-brownish fiber, known as nankeen, is frequently met with upon the cotton farms of the Southern planter. Its fiber is coarse and short, varying from five-eighths to three-quarters of an inch in length, but is never grown now as a distinct variety.

BRAZIL'S COTTONS.

Occupying the most considerable part of the area designated as the Valley of the Amazon, it is the most important country in South America, and nature seems to have lavished the best gifts of her hand in bestowing upon Brazil a tropical and semitropical climate, varying according to altitude, a plentiful supply of moisture wrung by the snow-clad Andes from the north-east and south-east tradewinds which come from the sea, a rich alluvial soil, and a long, dry season for gathering the cotton crop, requiring improved industrial and scientific methods alone to make this one of the finest cotton growing countries of the world.

Nothing is known definitely of the antiquity of the cotton plant in Brazil, but the earliest historians of the sixteenth century mention the plant and its uses as being well known to the ancient people inhabiting the Valley of the Amazon, and there is abundant evidence that cotton had long been used by the natives at the time of the Spanish invasion of the country in 1500, however, no records exist of the exportation of cotton from this country until late in the eighteenth century, when some mention

is made of shipments of cotton to Portugal in 1778, and to England in 1781.

Both Herbaceous and Tree cottons are grown in Brazil, and there are other indigenous species attaining a height of from 10 to 15 feet, which yield fair crops for several years in succession. Practically all the present crop is grown in the valley of the San Francisco river, though a large area of Brazil is adapted to the culture of the cotton plant.

The cultural methods of the country differ widely from those employed by cotton planters in the United States, and in comparison, are extremely crude and primitive, but scant preparation of the soil is made for the cultivated species the use of the plow being little known, the first requisite being to "burn off the woods and plant the seed at the proper time," the simple culture following consists in the use of the hoe "in chopping out weeds and cutting the sprouts three or four times a year during the growing season."

The roller gin is employed more extensively than any other kind in Brazil, producing a more uniform fiber, though little ingenuity is manifested in the manufacture of the presses, hence they are rude, operated by hand principally, making a light bale, averaging about 250 pounds weight. A large part of the cotton is consumed in that country. The old-fashioned spindle and distaff being used to draw it into threads. While a part of it goes into local mills, which are increasing in number annually, and aiding in the manufacture of fabrics for local consumption.

In 1904 the Brazilian mills consumed about 135,-

000 bales of 500 pounds each. The production had increased in 1906 to 275,000 bales, which increase seems to have made no gain on the requirements of the people, as we have no record of any exportation to foreign mills during this time.

COTTON CULTURE IN PERU.

That cotton is indigenous to Peru will scarcely admit of a doubt, for early in the sixteenth century, when the Spanish invaders conquered the country, the natives were found to be accustomed to the culture, spinning and weaving of cotton.

There are two varieties of cotton grown in Peru, which are known in the market as "smooth Peruvian" and "rough Peruvian." Smooth Peruvian yields itself more readily to the spinner's requirements, is very flexible and easily prepared for spinning. The rough Peruvian possesses characteristics closely resembling wool, is "fairly strong" and is used mixed with wool in the manufacture of woollen goods for which it is peculiarly suited, being almost as important as wool itself. There is a great demand for Peruvian cotton in England and other markets supplying woollen manufactures. All efforts to grow it in the United States, however, have been unsuccessful, owing to climatic influences which limit the life of the plant to one season's growth, instead of a number of years as designed by nature for its perfect development, which seems to have been found only in the latitude of its native Peru.

Other varieties, including Egyptian, are also grown here, to some extent, but is consumed in local mills.

The Brazilian methods of culture and handling cotton prevail in Peru, the difference being so slight as to be scarcely noticeable. Often the seeds are planted in a hole in the ground which has been made with no other implement than a pointed stick, and there is little exertion used in either cultivation or fertilization. The manner of baling does not differ materially from those employed in Brazil, and the bales are light, averaging about 200 pounds. In 1885 the total production was about 12,000 bales, while in 1906 it was augmented to 55,000 bales.

COTTON-GROWING IN MEXICO.

Cotton culture in Mexico is older than any known history of the country, and it is evident that centuries ago the natives were acquainted with the uses and cultivation of the plant, and were expert in the manufacture of cotton goods, before the advent of the white man.

Geographically, Mexico is splendidly situated, with a climate varying with elevation from the hot tropical valleys to cool, delightful, perpetual spring of the immense table-lands, that are eminently suited to the growth and full development of the cotton plant, if improved cultural methods and adequate labor could be employed the export of cotton from that country could, doubtless, be increased greatly.

The tree and annual varieties of cotton are grown in Mexico, the fiber is of good length and strength, though thinner and less silky than American cotton, as the plant suffers from insect pests, one of which is the boll weevil, the staple is not so clean.

It is estimated that about 80 per cent of the cotton crop is grown in the district known as "Laguna," which includes "a strip of the State of Coahuila and smaller adjacent portions of Durango and Chihuahua." Irrigation works on the Nazos river supplying necessary moisture.

Modern gins are used, each plantation having its own gin and press. The square bale, weighing about 500 to 550 pounds, with five one-inch ties, is used. Statistics of the annual production have not been obtained, but it is estimated at 130,000 bales, all of which is retained by mills of the country.

COTTON IN BRITISH INDIA.

India is credited with being the birthplace of cotton culture and manufacture, the mention of the plant by very early historians, has led to the conclusion that it originated there, but whether this is a correct view, or whether it was indigenous to some other country and was carried to India centuries ago, may ever remain obscured by the lengthening shadows of the past. It is certain, however, cotton was known to the ancient inhabitants of India, and it is probable that the rude and unwieldy one thread wheels used by them for spinning the coarsest yarns was copied later in the common domestic spinning wheels long in use in England and America.

The areas from which the commercial cotton of the country is drawn, are the Central Tablelands or Deccan, the Valley of the Ganges, Western and Southern India, and embraces what is considered the cotton area of India.

The climate is varied according to altitude and uneven distribution of rainfall. A hot, dry season from April to September marking the winter time and six months following a plentiful distribution of moisture give the summer and growing period in all the fertile valleys, table-lands and deltas of the great rivers contribute towards making India one of the cotton growing countries of the world. Within this wide extent of country are areas where the soil is unsuitable to cotton growing, where drought scorches plant life and where a rapidly increasing population demand that the strength of the soil must be given in food for its people, with ravages of insect pests in favoring localities, together with the retarding influences of unscientific cultural methods, preclude a probability of any material increase in the production of cotton in India. While production has increased to some extent in recent years, consumption of cotton in that country has increased likewise, making no perceptible change in the quantity for export; it is estimated that besides the amount consumed in local mills, about 500,000 bales are used in the homes of the people.

Experiments with American cotton in India have proved highly successful, but of the native varieties it can not be said that it is of the finest quality, "the fibres are large in diameter, short in length, irregular in strength and color, and often very dirty."

With the exception of a few districts where improved modern methods are employed in cotton culture, the usual mode of cultivation is but little advanced from that used by the people of India hundreds of years ago. Oxen are used for turning over



the soil which covers the last season's cotton stalks and serve as an inadequate fertilizer for the coming crop. The seeds are sown broadcast and the most primitive hand culture is given with hoes and other implements of rudest device.

For some years following 1860 when the South was demoralized by the Civil War the quantity of American cotton was reduced to such an extent that there resulted a great shortage in the world's supply, as a consequence very high prices ensued, and this in turn stimulated cotton growing in other countries, among them, India.

"The production in 1859 was 1,316,800 bales, and had risen in 1865 to 2,090,400 bales, equaling an increase of nearly 60 per cent.

In 1905 the total acreage for India was 21,332,000 acres, producing a crop of 2,848,800 bales; an average of about 67 pounds per acre, while in 1906 the total acreage was 22,609,000, producing a crop of 4,038,400 bales; an average of about 89 pounds per acre."

While these figures were compiled with great care by Messrs. Lyon & Co., of Bombay, and through them reported to the United States Agricultural Department, they may require some revision as measured by the out-turn shown in the commercial movement for the year.

It has been found quite difficult to secure reliable data, free from alteration and criticism from the most intelligent sources on the American crops; and when the environments of the East Indian cotton grower is considered, the retarding influence of unsystematized methods of cultivation and crop report-

ing, it is evident these figures must be taken with a view to amendment and correction and be accepted as approximate in nature.

EGYPT AS A COTTON COUNTRY.

The following excerpt from "Consular Report," July, 1894, is interesting and instructive.

"The story of the development of cotton culture in Egypt reads like a romance. In 1821, a French botanist found growing wild in the garden of a Cairo Bey a few plants possessing a long-stapled fiber, which he recognized as cotton of an exceptionally fine quality. The sagacious Mehemet Ali seized upon the discovery and turned it to benefit. Beginning with the vice regal farms, the raising of cotton became general as soon as it was known that its quality secured for it a quick market at high prices.

"Indigenous varieties were grown centuries ago but the improvement in its character and cultivation did not begin until 1820-21. Sea-Island seed from America and Brazilian varieties were introduced, the former in 1838 while the latter had preceded it in 1820, both gave promise of favorable growth, but for some reasons which are are not given the Egyptian soon returned to his native seed."

Egyptian cottons have a long, strong, uniform fiber showing equality of growth and in spinning value ranks next to Sea-Island.

Many advantages are offered as the home of the cotton plant here; an equitable climate, long, warm seasons beginning early, with the element of frost entirely eliminated, giving the plant a long time to

mature a continuous crop through the growing season. Egypt being practically a rainless region, the growth of cotton is dependent upon irrigation. After the Nile has subsided a rich alluvial deposit from the tropics is left upon the land, and the earliest method of cultivation consisted in sowing the seed broadcast as we sometimes do wheat or oats, but not so thick, little subsequent cultivation was required and as the crop was never disturbed by storm or rain, there was no loss or damage anticipated from these sources, and a high grade of cotton could be gathered, unless interfered with by insect depredations.

More modern methods of culture are employed at the present time, and as agricultural lands in the delta of the Nile range in value from \$200 to \$600 per acre, the Egyptian farmer economizes accordingly. The cotton is planted on beds from thirty to thirty-six inches apart, which are so arranged as to best receive the water necessary to the perfect development of the plant, nine to ten applications being required before picking begins. The seeds are planted near the top on the sides of the beds, and the plants are often not more than twenty inches apart in the rows; this close planting induces shade and dampness, which fosters insect life and is calculated to injure the fiber.

The cotton area of Egypt is limited to the extent of land reached by irrigation, for wherever it is possible to carry the vitalizing water of the Nile, the richest vegetation springs luxuriantly. The English are now building an immense dam on the Upper Nile for the purpose of augmenting the water

supply for irrigation with a view to reclaiming more of the desert land for increased cotton acreage.

1906 has been reported as an especially favorable year for cotton in the Valley of the Nile; the previous overflow of the river had contributed the requisite excess of vegetable matter to the soil; night fogs, which at times occur in temperate and warm climates to the detriment of the plant, were not experienced to cherish insect pests; and a large yield of cotton was harvested and from the estimated 1,850,000 acres, 1,400,000 bales were gathered weighing 500 pounds each.

"In this connection the following report of Lord Cromer on the Finance, Administration, and Condition of Egypt and the Sudan country for the year 1906 may prove of interest:

"Although the [cotton] area sown in 1906 is believed to have been 64,506 acres less than in 1905, the crop will probably turn out to be larger by from 100,000 to 150,000 bales, which increase is due to favorable climatic conditions, abundant water, and less damage than in 1905 from cotton boll worm.

"It now appears almost certain that the harm generally attributed to fogs is in reality done by the boll worm, which makes its appearance during the season when fogs are usually prevalent. * * *

"In order to ascertain to what extent the cotton bearing area is susceptible of expansion, I assume that the whole of the basin lands in the northern half of Upper Egypt will be brought under perennial irrigation, and that the uncultivated portions in both Upper and Lower Egypt will ultimately be reclaimed. The cotton-bearing area will then extend over some 5,600,000 acres. On the basis of a 40 per cent acreage per annum and a yield of 446 pounds per acre, this area might produce an annual cotton crop of about 1,981,000 bales of 500 pounds each. It is to be ob-

served that a considerable portion of the land at present under cultivation is being improved, which will without doubt contribute to raise the average yield per acre. * * * It will of course be understood that this crop of 1,981,000 bales can not be produced until both the water supply has been largely increased, either by raising the Assouan dam or by some other means, and until reclamation works on a large scale have been executed in Lower Egypt.

"The population of Egypt has been estimated at 10,000,000, and to provide food and clothing for these people, and protect the normal increase, it does not seem possible that any great addition to the annual acreage given to cotton can be made, unless, through improvements so vast as to require from ten to fifteen years to complete.'"

Cotton growing in Egypt was gradually developed: *"In 1850, thirty years after the cultivation began, the crop was only 87,200 bales and nine years later only 100,800 bales. By 1865 the production had increased to 439,000 bales. This remarkable growth was due to the scarcity of the staple, caused by the serious check to cotton culture in the United States during the Civil War. By 1890 the production had increased to 798,000 bales."

The cotton acreage and production in Egypt for the years 1898 to 1906 inclusive, is appended in tabular form, which will make it easy for ready reference, and also show the high average yield per acre annually.

*Cotton Production," 1906. Bulletin 76.

Year.	(Number) Acres. ¹	(500-pound bales) Production. ²
1906	1,850,000	1,400,000
1905	1,900,000	1,250,000
1904	1,850,000	1,258,000
1903	1,750,000	1,289,000
1902	1,700,000	1,157,000
1901	1,650,000	1,262,000
1900	1,600,000	1,075,000
1899	1,500,000	1,295,419
1898	1,450,000	1,112,174

RUSSIA IN ASIA AND ITS COTTONS.

The cotton growing areas of Asiatic Russia are: Transcaucasia, especially the low, level and fertile lands bordering the Caspian Sea, also, the eastern shore in Turkestan; besides, a large area of Turkestan extending from Arabia and Afghanistan on the south, to south of the Kirghiz Steppes. It has been shown that much of this great territory is adapted to the growing of cotton, and under governmental encouragement, protection and aid produces considerable quantities of the fiber, however, it was not until the American Civil War, owing to the scarcity and high prices experienced at that time, the cotton culture in Turkestan received new life and vigor.

Native and the hardier American Upland cottons

¹Compiled by Alfred B. Shepperson in "Cotton Facts."

²Information furnished by Herman Capelle Co., and U. S. Agricultural Department.

(In the chapter on Egypt the data is drawn in part from Reports of Department of Com. & La. Bureau of the Census.)

are grown in the country, the long staple varieties have been found unsuited to the climate.

In many places the seeds are sown broadcast and rude wooden plows and antiquated cultured methods are employed, which can but minimize the yield; while in the cotton area surrounding Tashkend, there seems to be a decided determination to use the most modern improved and scientific cultivation and implements in growing this useful fiber which give encouraging results.

“According to the Commercial Industrial Gazette of St. Petersburg of January 24, 1907, the production of cotton in Russia in 1906 amounted to 675,000 bales of 500 pounds each, of which Central Asia produced 639,000 bales and Transcaucasia, 36,000 bales.” This region being in a belt of country subject to frost damages, influences the output more or less, as the frost appears early or late. It is estimated the early frost in the latter portion of 1907 destroyed 400,000 bales.

CHINA AS A COTTON COUNTRY.

It is evident that cotton was cultivated in China for domestic uses, centuries ago, but statistics were not available to show the actual quantity grown, until recently a report was given by Mitsui & Co., Osaka, Japan, to the United States Agricultural Bureau showing the quantity grown in China in 1906 for the local mills to be 418,000 bales of 500 pounds each.

The herbaceous varieties of cotton are cultivated here and the fiber is of inferior quality, probably, owing to the primitive and non-progressive manner

of cultivating the plant, where little preparation is given the soil and the seed are sown broadcast, resulting in a stunted, stubby stalk, small bolls and much immature cotton. In some localities better modes of culture are pursued resulting in better crops.

There are large areas of China, no doubt, adapted to successful cotton growing, but as there is a large population making a heavy demand for food products, necessarily reducing the area of tillable land to be placed to cotton, which is grown only in small patches for home consumption and scant exportation.

Korea received her first introduction to cotton culture about five hundred years ago from China, the best cotton lands are in the southern part of the peninsula, but there is little probability that much of this territory will be so employed, as the existing circumstances show a great similarity to those of China in exacting food products from the land.

COTTON IN JAPAN.

Though cotton has been known in Japan for some centuries, being brought from China, it was not until early in the seventeenth century that the culture commenced, but owing to the inferior quality of the fiber grown, the prosecution of the industry made little progress, though mill construction has increased rapidly, and to meet the demands for raw cotton other countries are relied upon to supply the spinning requirements, the disposition of the people to buy factory made yarns, and fabrics of foreign manufacture as being superior to those made from

home grown cotton, from which facts the cause of this decrease is largely due.

The total production of cotton for Japan "in 1904, amounted to 16,000 bales of 500 pounds each, while that of 1906 was 11,000 bales.

COTTON CULTURE IN OTHER COUNTRIES.

There are other countries producing considerable quantities, namely:

*Turkey, with a production in 1907 of about 80,000 bales of 500 pounds each; Persia, with a crop of 51,000 bales; Greece, about 20,000 bales; Italy, 10,000 bales; Indo-China, 15,000 bales; Africa, other than Egypt, 20,000 bales; Haiti, 15,000 bales; Dutch East Indies, 12,400 bales; Japan, 9,000 bales; Korea, 6,000 bales, and Argentina, about 10,000 bales.

In addition to these, there are still other countries producing some cotton, nearly all of which is consumed in the homes of the people or in the local mills, rendering it impossible to estimate the exact amount grown.

Cotton consumption steadily increased making larger supplies necessary and this heavy demand falling largely upon the spinners of Europe, caused them to fear that the supply of upland cotton from the United States would be inadequate to their requirements, a movement to encourage cotton culture in many European colonies was begun, for the purpose of growing crops of cotton, which, though small as taken separately, in the aggregate would

*"Cotton Production," 1907, Dept. of Com. and La., Bureau of the Cen.

be sufficient to supplement any possible deficiency in the amount received from the United States to the extent that steadiness in annual supply would follow.

“*The principal efforts in this direction have been made by the British Cotton Growers’ Association; in a much less degree efforts have been made by the German Colonial Economic Committee; for France, the undertaking is in the hands of the Colonial Cotton Association; for Portugal, The Industrial Association of Lisbon; for Italy, the Cotton Industrial Association and Cotton Exchange; for the Netherlands, the Netherlands Cotton Growing Association; for Belgium, the Belgian Cotton Association; and for Spain, the National Industrial Propaganda.”

* * * * *

“Outside of the cotton production of the East Indies, Egypt, and the Sudan, the colonial crop of 1903 was 3,052 bales with a net weight of 478 pounds, which weight conforms to the uniform weight with the computed bales of the cotton of the United States. In 1905 the crop had increased to 12,109 bales, and in 1906 to about 18,000 bales, the crop for the last year being to a small extent estimated.

“The increase of the cotton of 1906 over that of 1905, was 5,677 bales in British colonies outside of Egypt, the Sudan, and the East Indies, and 250 bales in German colonies, the increase in French, Spanish, Dutch, Italian, Belgian, and Portugese colonies being practically nothing outside of the East

*Crop Reporter, January, 1908.

Indies. The British increase is found in Uganda, the Nigerias, Cyprus, and several of the West India Islands, against which there are decreases in the Central African Protectorate and in Jamaica. The German increase is in Togo. Two-fifths of the British increase is found in Central Africa and in the Nigeria region."

The territorial area of Northern Nigeria is estimated at 323,000 square miles covering a region entirely tropical and semitropical, a large proportion of which can be placed to cotton culture. An area of 323,000 square miles represents over 200,000,000 acres. The entire "cotton belt" of the Southern States of America contains about 448,000,000 acres, and while vast tracts of forests and waste lands are included in this belt, yet enough remains suitable for the growth of cotton to give an adequate acreage sufficient to supply all the world for years to come.

The British Cotton Growing Association in its efforts, aided by governmental support, to grow cotton in the Nigerian territory finds the best lands for its production lie some distance inland, and to develop these lands into paying properties, require not only competent and skilled labor, but large capital, and to evolve from the primitive forests and virgin soils cotton farms of sufficient magnitude to produce a quantity of cotton that would affect to any appreciable extent the output of the world, will require many years to accomplish, and the construction of railway transportation facilities to interior points is absolutely necessary to their successful operation.

Quoting from "Cotton," a Manchester, England, publication states, that "cotton is not only indigenous, but has been cultivated on a comparatively large scale for centuries for native manufactures, which have achieved a reputation throughout West Africa—Kano, the center of the industry being not inappropriately termed the 'Manchester of West Africa—the present production of cotton for native use has been estimated at 50,000 bales.'" As no railway lines extend into these cotton areas, the production therefrom amounts to naught as a commercial commodity, and by virtue of their inaccessibility will remain so for an indefinite time.

BRITISH NORTH BORNEO.

Lying between, from about 110 degrees to 120 degrees east longitude, cut by the equator, Borneo is wholly a tropical country; rich, perhaps, in undeveloped fertile soils and agricultural possibilities, but handicapped by its still primitive inhabitants; the enquiry has been raised as to the practicability of awakening an interest in cotton growing among the native population, under the auspices and protection of the British Government, as heretofore efforts in this direction have been meager and tentative. The samples forwarded to the Imperial Institute for examination showed the staple to be short, rough and irregular in length and strength, but it was thought to be, under proper cultivation, capable of material improvement, but it is a weary journey between primeval man, forests and wide ocean position, to civilized man, cultivated fields, railway transportation facilities and skilled labor,

all of which are essential to the successful production of cotton; and when Borneo has reached this stage of advancement, possibly new cotton producing areas may be found there, but not until then will it be of sufficient magnitude to be reckoned as one of the cotton producing countries of the world.

COTTON AREA AND PRODUCTION.

The cotton plant reaches the most perfect state of development in the fertile soils of warm countries, and it is between the fortieth parallel north and the twentieth south latitude that the world's supply of the "fleecy staple" is grown. This area "extends from the Mediterranean Sea to the Cape of Good Hope; from Spain to Japan and Australia; and from Norfolk, Va., in the United States, to Buenos Aires, in South America." This whole area marking the cotton belt of the world, though vast in itself, is circumscribed, as compared to the entire surface of the earth, yet, taking into consideration the corresponding extent occupied by ocean bodies, by lands unavailable, of countries in which cotton culture is an unknown factor, and countries in which it has proved unprofitable, leaves only the southern portion of the United States, British India and Egypt as the three principal cotton producing countries of the world, the United States being paramount to all the others combined, virtually occupying a position giving it a preponderance sufficient to practically control the market, and it is self-evident that there is little danger of overproduction of this valuable clothing material for an ever increasing population.

As an index to the future, reliable statistics show the demands of the world for cotton, annually increasing in a ratio equivalent to, approximately, 400,000 bales; an increase commensurate with the additional acreage, and from increased demands that will be had upon the cotton fields at no distant day indications point to an increase proportionately higher.

COTTON AREA OF THE UNITED STATES.

By reference to Map 1—Cotton Producing Area of the United States, 1907, in "Cotton Production," Bulletin 95, it will be seen that beginning at Norfolk in south-eastern Virginia, a line traced irregularly avoiding the mountain regions of North Carolina and Tennessee, including portions of the south-west corner of Kentucky and Missouri, along or near the northern boundaries of Arkansas and Oklahoma to the eastern boundary line of New Mexico, thence south to a point on the boundary line between Mexico and Texas, indicates the limits of the cotton area of the United States, the greatest cotton producing region of the world; an expanse of territory 1450 miles in length from east to west by 500 miles in breadth, comprising a total area, estimated at 700,000 square miles, or 448,000,000 acres, of which only one-fourteenth, or one acre in fourteen was given to cotton in 1907.

In commenting on the area adapted to the culture of cotton in the Southern States and the amount produced thereon, the following statement from Bulletin 76, Bureau of the Census, is appropriate and to the point.

“No country in the world possesses the combination of advantages found in the southern part of the United States for profitable cotton cultivation. In this section the soil is naturally adapted to cotton growing, the climate is favorable, the labor better than elsewhere, and the farm management more intelligent and experienced. Combined with these favorable internal conditions are good transportation facilities.”

There is a great demand for American cotton in the markets of Europe. *The amount that left our ports on foreign demands ending March 31, 1907, was 8,705,896 bales, compared to 7,650,693 bales for the preceding year. The exports of the first seven months of the present commercial year exceed those of the corresponding period last year by 1,952,380 bales.

EARLY EXPERIMENTS AND PRODUCTION IN THE UNITED STATES.

The knowledge of cotton growing wild in islands of the West Indies, is as old as the history of their discovery by the Spaniards in 1492, though little efforts were made towards its cultivation until 1621. It seems that the time for its introduction as a useful commercial and domestic product was now ripe, and the “divinity that shapes our ends” kindly took the cotton plant in hand tendering it for the benefit and civilization of the whole world, and as a late writer expresses it, “man can not be civilized

*Cotton Production, 1906, Bulletin 76, Dept. Com. and La., Bureau of the Cen.

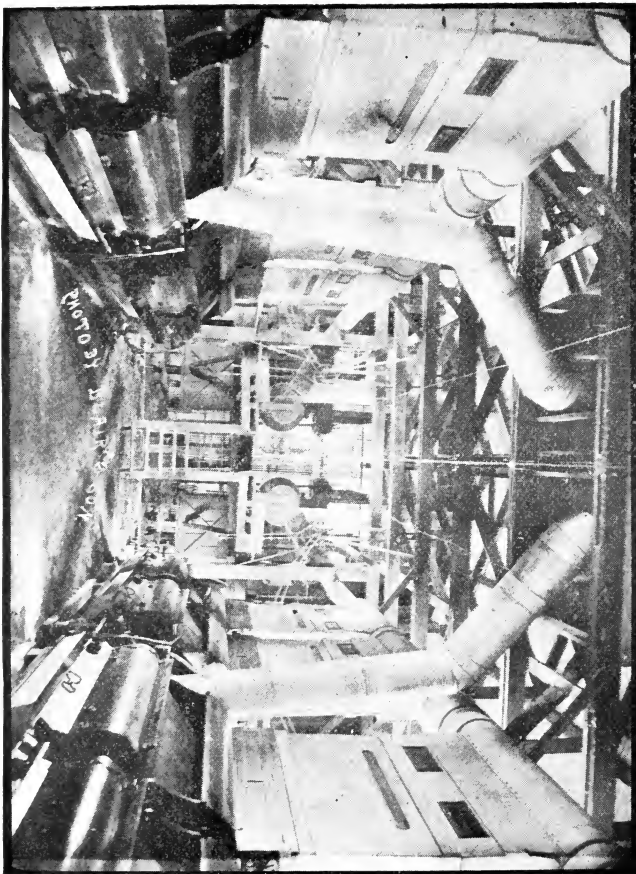
without clothing”* him. Necessity, the rugged teacher, at a very early period, forced upon the first settlers of this country attention to manufacture and a demand for a new clothing material, to which cotton alone was adequate or available. **In the ten years following the founding of Massachusetts Colony in 1630, a heavy emigration, equal to the whole population annually, was added, and the raising of food products became the most profitable pursuit, so great was the demand that the price of cattle went as high as twenty-five pounds sterling, but when in 1640, the Republicans gained the ascendancy in the government in England; persecutions for religious non-conformity ceased and with it emigration to this country was reduced to almost nothing; the demand for provisions was so reduced that cattle sold for not above five pounds a head. The effect was extremely distressing, but it put the intelligent colonists upon new resources, and to help them in this exigency, “*the general court made order for the manufacture of woollen and linen cloth”; cut off from source of supply in England on the one hand, it remained for benignant Traffic to open a way to supply the deficiency and trade being opened with the West Indies and Wine Island, where among other goods, much “cotton wool” was brought into the colony and the people soon learned a way to supply themselves with [cotton] linen, by spinning and weaving the new fiber, seemingly the gift of Providence.

Hence, the seeds of the cultivated varieties are

*Watkin's "King Cotton," page 10.

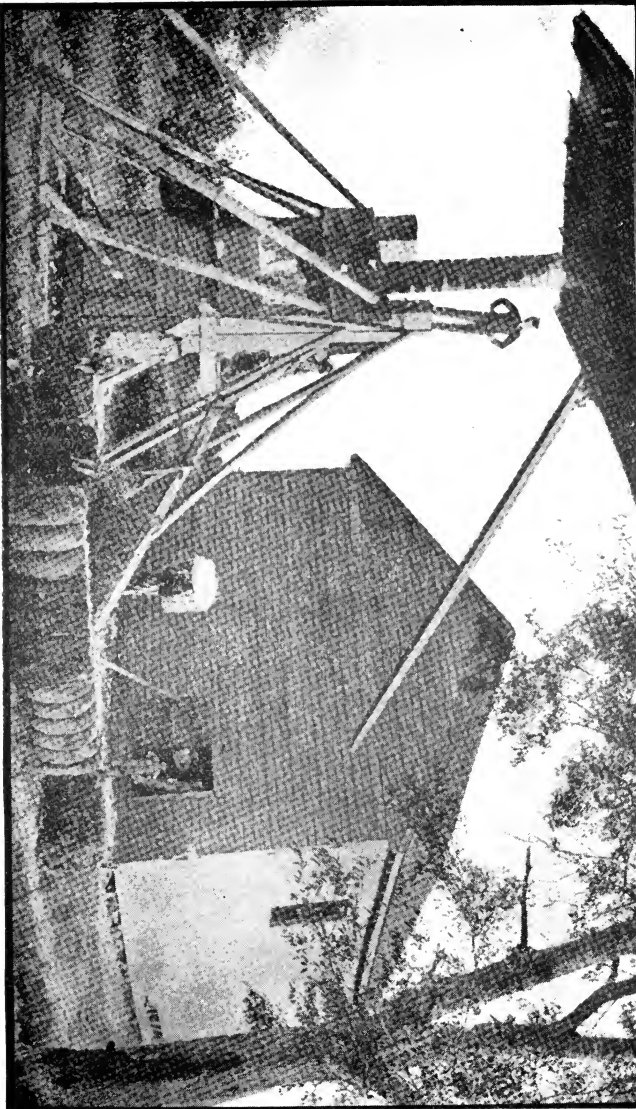
**Book of the United States," p. 353.





A MODERN GIN PLANT AT GATESVILLE, TEXAS

Capacity 100 bales a day. Courtesy Bob Brown.



AN ANTI-BELLUM GIN

Showing the old-style wooden screw press, exposed to the weather, capacity of such ginner 3 bales a day. Courtesy of "King Cotton."



thought to have been brought from the West Indies and mention is made of its culture in Virginia as early as 1621; in South Carolina in 1733; In Georgia in 1734, the most suitable soil for the cultivation of cotton being the islands lying along the coast which produced the best variety, known in France as "Georgia cotton" and in England as "Sea-Island."

In 1822 cotton was reported as "growing to the height of six feet," in Louisiana, though its culture is said to date back to 1722. In 1822 there were exported from the port of New Orleans, 167,742 bales, however, the evolution of the cotton plant, from a beautiful natural curiosity, a wild weed of the tropics, to a cultivated commercial substance, the snowy web of a single season's weaving, might encircle the globe, was of slow growth, and it was 118 years after its introduction in Virginia, before a shipment was made to England. *A few bags were exported from Charleston, S. C., in 1747; not until 1770 was it made a staple crop, a record of the shipments to Liverpool are as follows: "Ten bales from Charleston, 3 bales from New York, 4 bags from Virginia, and 3 barrels from North Carolina." England looking on, incredulous that such immense (?) quantities of cotton could be grown in the colonies, seized 8 of the 14 or 15 bales shipped to Liverpool in 1784, impressed with the belief that it had been wrongly entered and was *not* grown in the American colonies.

The extension of the cotton growing areas, within the last ten years, has reached a surprising acreage,

*From "Cotton Production," Bulletins 76 and 95.

especially in the *Panhandle of Texas, which comprises 51,350 square miles, produced in 1889 only 2000 bales of cotton, had increased to 113,623 bales in 1907; east of this a block of sixteen counties, with Hardeman, Wichita, Eastland and Taylor as corner counties, encloses an area at one time thought to be unsuitable to cotton growing, owing to the lack of rains, but produced in 1899, 47,622 bales, while in 1907, the increase had reached 206,979 bales. Oklahoma has a greatly increased cotton acreage, where large ranches have been "cut up" into small farms, and in localities formerly given to wheat, the growers being disposed to change from wheat to cotton as the surer crop.

Irrigation has been utilized to a considerable extent in Texas, New Mexico, Utah and Arizona, and promises a greater development in the future, according to statistics 10,000 acres of this irrigated land was given to cotton in Texas and New Mexico, in 1907. As the existing climatic conditions are not wholly unlike those of Egypt—a long, hot and dry season, with water applied as required during its period of growth and maturity, which ripens a strong, uniform fiber, followed by a long dry season on the opening bolls, are interesting facts connected with cotton growing in the south-west. Experiments with Egyptian cotton are being made in Arizona along the Salt and Gila rivers, and as long as science, aided by governmental encouragement seeks for utilization of waste lands, for improved methods and products, great results may be expected.

*From "Cotton Production," Bul. 95.

CHAPTER II.

COTTON CLASSIFICATION.

Owing to the fact that cotton ripens in a period of four months, more or less according to the seasons, varying somewhat as to the latitude of the southern or most northern boundary of the cotton belt, usually beginning about August 1st and ending with the first killing frost, the picking continuing often till March.

The early maturing cotton that is gathered before any rain has fallen gives the better or high grade cottons, while to the practiced eye of the expert classer, the vicissitudes of the weather are pictured on the cotton samples, and he eventually reads the story of rain, or storm, or neglected fields in the fleecy staple, and pronounces them *stained*, *tinged* or *low grade*, as the cotton shows itself to be in character, from this exposure.

As there is no definite mechanical rule by which cotton can be classed, the matter resting with the judgment of the individual to a great extent, evidences the reason for many discrepancies arising between even expert classers, in passing on the same cotton.

All classers have a somewhat matured idea as to what constitutes a particular grade of cotton, but as it is rare that two grades of cotton are identically the same in every particular, then it follows that one grade approaches another so nearly in appearance as to be called the same in character, and on these re-

semblances, opinions differ as to the particular class to which a certain grade should be assigned.

In the main, there is a general agreement between classers as to what constitutes a specific grade of cotton, more particularly, those classing cotton in any particular State, that is, one well versed in classing Texas cotton would vary but little from his accustomed classification of such cotton, without reference to type or sample, but if requested to classify North Carolina or Georgia cotton, would find himself, perhaps, somewhat at sea on first attempt, likewise, the Georgia or Carolina classer would see a marked difference between the Texas and Carolina or Georgia product on first observance of these cottons, and until accustomed to the character of the two cottons, would, no doubt, question his own ability to correctly classify them, for a time at least.

Winds, rain and sunshine, so change the appearance of cotton while exposed to the weather in the fields as to produce many grades of cotton, and to properly judge these grades is the duty of the classer, and it is well to again emphasize the fact that a perfect classification of cotton can not be performed with absolute accuracy, as an evidence of which, no two experts in classing a large lot of cotton always agree, nor, indeed, does the same expert in a second classification of the same cotton produce an exact duplicate of the initial classification every time.

It is admitted by nearly all interests in the cotton trade that these differences of opinion among cotton classers exists to a more or less extent, especially, when making classifications on assorted or mixed grades, a proof positive proving the absence of any

fixed rule or standard by which cotton can be classed. It would be unfair to allege dishonesty of purpose as a cause of difference of opinion arising between classifiers taking up a list of cotton, when a difference exists as to grades, as in most instances the individual who classes the cotton stands above reproach for honesty, truthfulness and intelligence.

No Mechanical Means.—As previously stated, there being no mechanical means for performing the work absolutely correct, as the classification is done almost exclusively by the eye, it is apparent then that those who have eyes with an unimpaired vision, can be depended on and should give the better results.

The amount of leaf fragments, stems, dirt, gin cuts and color are the elements that go to make differences in grades of cotton, and to so separate samples of cotton into grades showing more or less foreign matter and color, constitutes the requirements exacted by the classifier to tell how much of this leaf, dirt and trash can be admitted into a sample to make it a certain grade of cotton.

In order to make classification as near an exact art as possible, a starting point in classification is just as necessary as the classification itself, and this starting point is known as the "base," and the cotton taking this base is called "middling," or "middling basis," in the vernacular of the cotton buyer and classifier.

MIDDLING COTTON.

Middling cotton is the basis grade in all markets, and is the universal standard by which all other grades are measured. It is a white or nearly white cotton

and contains only a small amount of foreign matter. To know the middling grade is to know the foundation of classification, and to know it well is to see it, as no description can be made of it sufficiently clear to give the reader a definite idea in words as to its exact type.

All cotton bolls are enveloped in a covering of triangular form, known as "squares," and when the bolls are ripe and burst, exposing the white, fluffy cotton protruding beyond the narrow limits of its former prison cell, the squares are dead, easily crumbled, and it is quite difficult to pick the cotton from the bolls without getting a portion or all of the dried, dead squares in small fragmentary parts into the cotton.

When the leaves of the cotton plant, from drouth, frost or any cause, die, and are easily pulverized, particles of such dead leaves, also, often get into the cotton to a more or less extent, governed by the care or carelessness of the picker, and these leaf fragments in addition to that of the squares, lower the classification.

It has been argued by some classers, that if in one pound of clean cotton the gin throws the fragments of one dead leaf, and the grade recognized as good middling, two leaves would give strict middling and three leaves middling and so forth.

While this illustration can not be used as a determinate feature in making the classification exact, yet it illustrates nicely an idea of the comparative amount of leaf-trash that might be admitted, and probably serving as a guide to the classer.

Gin saws acting on very dry leaf, cut it into very small particles, and the cotton appears as if the trash

had been injected from a pepper-box, and the cotton is said to be full of "pin head" trash, which lowers the grade more than if leaf fragments were larger.

When the bursting cotton bolls first appear in the fields and are gathered very soon afterwards, that cotton shows to be a creamy white tint, but when allowed to remain for some time exposed to sunlight its creamy color is bleached to a white cotton, and both "creamy" and white cottons are recognized as cotton of "good color," and if only a small per cent of leaf appears mixed with the cotton it is known as middling in grade, if either creamy or white.

Recognizing middling cotton as the basis from which other grades and valuations are made, then cotton showing less and less leaf and stem will be given a higher classification and value, while cotton exhibiting more and more foreign substance will receive a lower gradation and value, for which grades above and below middling distinctive names are given, which will be shown in another portion of this work.

Light is an indispensable aid to the classer in getting at the relative value of the grade, yet if exhibited in certain ways it will prove flattering and cause a too high grade to be given. To class cotton in the open air early in the morning when the eastern sky has a reddish halo, or to attempt to do so late in the evening with a reddish tint in the western horizon, the reflective effect on a sample of cotton exposed to such a light will cause the sample to appear fully a half grade better than it really is, hence such lights are deceptive in their nature and approach very nearly artificial lights, which are valueless for classification purposes. From light to shade and shade to light, as

the passing of clouds during the day, are causes that produce varying ideas respecting gradation, and care should be exercised to allow for changeable lights.

In classing cotton in bright sun light, a better idea as to the real color of the cotton can be had by one's back being turned towards the light and the sample opened in the shade of the classer holding the sample. To attempt to class cotton in sunlight reflected from white or gray earth or when snow is on the ground renders it difficult to do so. Constantly classing cotton under a light of uniform character, as in a building with sufficient window light, to which the classer has become accustomed, or in the open air to which light the classer has grown to be familiar, conduces to effective and satisfactory results.

Samples Drawn for Classification.—With the improved machinery for ginning and packing cotton, and in place of the old “lint room” into which the ginned cotton fell like a snow storm, it now passes through condensers that press the cotton in smooth “bats” that fall in gentle folds one upon another in the bale, produces one from which samples can be drawn and opened as book leaves, making it very easy to see well the true character of cotton drawn. Samples taken for classification should not be torn crosswise, but should be opened lengthwise, a process to which one should accustom himself, as the sample thus opened can be examined with greater facility. Look well for *gin cuts, motes, leaf fragments, stem, dirt, tinges, stains, and color*, as these are the governing features determining the character of the grade. A sample of sufficient size, approximately eight ounces in weight should be taken, especially when cotton is

shipped, and a guarantee on classification accompanies the same.

When it is known that a bale of cotton weighing, say, 500 pounds, is the product of one, two, five or perhaps ten acres of land, a sample may or may not be indicative of the true character of the bale entirely, which, if not so, gives cause for dissatisfaction, when the whole bale is judged by the sample offered as its representative. If an entire bale is gathered with care, free from foreign substances and discolorations and ginned without admixtures of other cotton, then a drawn sample would be a good index representing the true class of cotton in the bale, but when cotton is gathered with careless hands, foreign substances allowed to enter freely into the cotton this class of low grade cotton injected with better picked cotton, makes a very mixed cotton in the same bale, and a sample taken from such a bale would scarcely give an idea as to its literal class. This gives cause for the necessity arising, requiring a sample taken from both sides of a bale, in an effort to ascertain the true class of cotton therein, and even a single sample of such cotton may not show uniformity in grade.

It is customary in the New York and New Orleans markets, and perhaps universal in all the other markets, where two samples of cotton are drawn, one from each side of the bale, to base the value of the bale by the sample of lower grade, unless it be shown that the amount of low grade cotton is too small to be reckoned.

Since better ginning plants have been established in the cotton belt, and the tendency is to make them of greater capacity as to output, it is not unusual to

find four, six and eight gin stands of large size in one building, and since ginnerers usually retain a full "roll" in each gin stand after a bale is finished, and when a load of good grade of seed cotton is passing through the gin, having previously retained a full "roll" in all the gin stands from the bale of lower grade cotton just preceding it, this "roll" of inferior cotton makes one side, or a "plate" of more or less thickness on the bale of good cotton following, and the "roll" of good cotton from this bale of high grade, remains to become a portion of the next bale to follow. Such method of work necessarily makes "two sides" to a bale of cotton, that is to say, the cotton shown on one side of the bale is different in grade to that on the other side, and where such exists, the classer should be careful to cut and draw a sample sufficiently deep from the bale to enable him to pass through the stratum of good or bad cotton and secure a sample showing the exact quality of the cotton beneath the thin shield of different grade enveloping this one side.

Intentional "Plating" Condemned. — Designing growers sometimes resort to practices the purpose of which is to deceive credulous or incredulous buyers, by placing good grades of cotton on each side of a bale, filling the middle portion with cotton of a lower grade, in an effort to have it appear that the whole bale is composed of good cotton, and thereby receive a price commensurate with the value of such cotton as is shown superficially. Such practices, however, are almost obsolete and can not be too severely condemned, but to the buyer beginning the classification of cotton and launching out into such fields of work for his future occupation, it is timely to be well

advised on the actions of unscrupulous ones perpetrating such frauds, and he should look with care and scrutinize closely all bales of cotton offered for sale, where cotton is bought in the bale, from which samples are drawn. Such surveillance of the bale can not be had where cotton is bought from factors' tables by sample alone, the classer relying upon the integrity and guarantee of the vendor for protection of his purchase in most every instance.

Hurried Harvesting.—Their hurry to harvest cotton rapidly, induces many growers to enter the fields early before the dews of the morning have faded, and following closely after rainfall, also, results in much wet cotton being gathered, which carried to the ginner in this condition, gives rise for serious objections being made to such class of cotton, showing as it does much dampness and an excessive cutting of the fibers. Extreme dampness or water "packs" should be looked after. Leaks from steam or water pipes sometimes give an excess of moisture to a bale of cotton when in process of formation in the press, and the results of such carelessness are as much to be deprecated as if the water were injected by design.

Dry Cotton.—Should necessity require that cotton be gathered wet, it should not be allowed to pass the gins until after it has been thoroughly dried, then dust, dirt, sand and much leaf and stem can be eliminated, resulting in a much better grade being shown, while on the other hand if permitted to be ginned wet or damp, all foreign substances adhere with greater tenacity to the fiber, and giving, by way of illustration, a low middling grade, which, if it had passed the gins dry, would have produced, perhaps, a mid-

dling in classification, and a bale of cotton five to seven and a half dollars more in relative value.

Premium Values Are Offered.—Too much encouragement can not be given to the grower who exerts himself to produce cotton of better quality, and the tendency of the intelligent culturist of today is directed in this line, as premium values are offered as a stimulus to those who can and should undertake to improve the varieties now cultivated. Greater attention should be given to the quality and not the quantity grown, and equal care bestowed on the harvesting and ginning, for on this as much as any part of the process depends the success for securing high grade cotton and good values.

Lower Grades More Difficult.—The classification of the better grades of cotton, say, middling and up, is accomplished with greater facility, and a determination to greater accuracy is more reasonably certain, but as the lower grades, those designated as under middling, show a preponderance of foreign matter, discolorations, tinges and stains, the difficulty for determining the correct, or relatively correct grade, increases as the grades are lowered. As the gradation of cotton is known as full, half and quarter grades, and the gradation of one so nearly harmonizing with its approximate grade either above or below in character, it is quite difficult many times to determine to which class any certain grade belongs, and for this cause, differences of opinion arise between classers, and, indeed, the same classer passing upon a sample of cotton, which had been classed by him at some previous time, will differ from his former opinion. To those unacquainted with cotton classification, this may

seem strange, but if questioned, any good classer will confirm the statement, and upon this point, a member of the New York Exchange, said: "There are certain people who say the grades of cotton, or the types of cotton by which the grades are determined, should be mechanically fixed, and that the classification committee should be required to classify mechanically in accordance with those mechanical types. Now everybody who has had any experience with cotton classers knows that the classing of cotton is not a mechanical art; it is the work of the artist essentially. The good cotton classer does not class cotton by a mechanical standard. I have that well illustrated in the case of one of my own classers in the South—one of the very best classers I have ever known—who could class 2000 to 3000 bales of cotton a day, and who would turn out the most beautiful lots of even-running cotton that I have ever seen in my life. But a peculiarity of that man was that if he hesitated over a sample and took it up the second time and considered if he was right or wrong, he always got it wrong. * * *

Classing cotton is a great deal more than matching samples. It is a matter of the eye and the judgment, a certain feeling that only a man with an artistic temperament can have. All good classers are in a way artists. No cotton classer can tell you why he classes a certain sample of cotton as strict low middling and another sample as strict middling; he just *knows* that it is so."

An absolutely perfect system of classification for cotton, therefore, can not be hoped for.

COTTON STANDARDS.

From the foregoing statements declaring the absence of any mechanical measurements by which cotton can be classed with absolute accuracy, the question might arise, How then must cotton be classed, and who shall be the final arbiter in the matter? To better illustrate, A, who is a cotton merchant and a classer, ships 50 bales of cotton to B, also a cotton merchant who either classes or has the cotton classed on arrival; A puts out the shipment as even running middling cotton; B states the classification shows to average five points under middling; now both men being intelligent, honest, equal in knowledge of cotton classification, by whose decision shall the matter be determined; shall the settlement be on A's or B's classification? The Exchanges adopt certain grades of cotton, which grades are known as the "standard" or "standard grades." For explanation of settlement see Arbitration.

STAPLE COTTON.

The name "staple cotton" is applied to all cottons having long fibers or long lint. It may be graded and classed as short fiber cotton, that is, middling, strict middling and so forth, speaking relatively as to the amount of leaf, stem, dirt, color and tinges, but its merit value is determined not alone by these impurities, nor lack of them, but by the length of staple as well. Cotton showing less length of fibers than one and one-sixteenth inch is not recognized by cotton authorities as long staple cotton, while staple of this length and above bear valuations increasing in value

as the lengths increase, or in a nearly proportionate ratio. The strength of the fiber is an element of consideration, and should not be overlooked in passing upon a sample of staple cotton.

It would seem from practice and good judgment that in efforts being made to classify staple cotton that no discrepancies or difference could arise as to length of staple, but as a matter of fact the reverse frequently obtains, as what one classer would recognize as one and one-eighth inch staple another would call it one and three-sixteenths or one and one-fourth inch, while, perhaps, another might still pronounce it one and five-sixteenths, each being equally honest in his judgment. These seeming differences can be harmonized on the theory that one classer in going through a list of samples may draw fibers measuring one and one-eighth inch, while another classer operating on the same samples will draw fibers actually measuring one and 3-sixteenths or one and one-fourth inch in length and so pronounce it. This is because saw gins acting on staple cotton break it more or less, resulting in the production of a grade of cotton showing uneven lengths, and causing want of harmony among classers as to the exact length of staple.

The length of the staple, although an extremely important matter in determining the spinning value of cotton, is a distinct consideration, as well as the tensile strength of the fibers, and a classer in attempting to give a value to such characteristics should know well their true merits.

RELATIVE GRADES.

Middling cotton being the basis grade from which all the other grades are figured, each grade represented as being above or below middling in class has a relative value compared to middling. Middling being recognized as a white cotton or nearly so, is a fleecy cotton containing only a small portion of foreign matter, strict middling a less quantity, good middling still less, middling fair almost free from any impurity, while fair cotton is entirely free from all contaminations of other substances, white or creamy and perfectly ginned—the highest grade given to any class of cotton.

Descending the scale from middling through the entire list of lower grades—those below middling being known as the lower grades—the values of these grades decrease as the grades become lower in type, which fact is known by the increasing excess of foreign matter injected therein, until ordinary is reached, the lowest grade of white cotton.

There are thirteen distinct grades of cotton very generally recognized in the spot cotton markets of the country, as follows:

Fair.	Strict low middling.
Strict middling fair.	Low middling.
Middling fair.	Strict good ordinary.
Strict good middling.	Good ordinary.
Good middling.	Strict ordinary.
Strict middling.	Ordinary.*
Middling.	

*Secretary Wilson, of the United States Agricultural Department, in conforming with an act of Congress to es-

The grades shown as fair, middling fair, good middling, middling, low middling, good ordinary, and ordinary are known as the "full grades," while the stricts are designated as "half grades," between them in class the "quarter grades" or "splits" have a recognized value among spot cotton buyers. These grades cover the class known as white cottons, and as more or less cotton is unavoidably left each season exposed to the changes in the weather, the range of grades become wider as discolored, tinged, and spotted cottons are shown as results of exposure, giving cause for such grades as middling tinged, middling stained, strict middling stained and so on.

The discolored cottons are in a separate class distinct from the white cottons.

tablish standard grades of cotton, called together several expert cotton classers from different parts of the cotton belt, who, acting with three experts of the Department, established the nine grades known as middling fair, strict good middling, good middling, strict middling, middling, strict low middling, low middling, strict good ordinary, and good ordinary.

The samples from which these types were selected were gathered from the different exchanges and boards of trade from different parts of the United States and the large Exchanges of Europe, and from this large number of samples the nine were selected to be known as the *official standards* or *commercial grades*.

With these types as guides, the Department will prepare others of similar or parallel description, to be boxed and sold to whomsoever may be sufficiently interested to pay the cost for samples and doing the work.

The committee of experts establishing the nine grades of cotton, finished its work about February 5, 1909, after having been in session for several days.

The act of Congress requiring the Secretary of Agriculture to establish the official type standards was the result of the efforts of Congressman Burleson of Texas.

GRADES TENDERABLE ON FUTURE CONTRACTS.

The New York Cotton Exchange formerly recognized thirty grades of cotton, representing what it called the official list tenderable on future contracts, but on and after April 1, 1908, this list had been reduced to 18 and so remains now, and is as follows:

Fair.	Strict good ordinary.
Strict middling fair.	Good ordinary.
Middling fair.	Strict good middling tinged.
Strict good middling.	Good middling tinged.
Good middling.	Strict middling tinged.
Strict middling.	Middling tinged.
Middling.	Strict low middling tinged.
Strict low middling.	Low middling tinged.
Low middling.	Middling stained.

These grades are, according to the rules of the New York Exchange, deliverable on any future contracts bought or sold through this Exchange. That is, if one buys a hundred bales of cotton through any member of this Exchange, the seller has the right (option) to deliver any of the above grades on said contract, which is based on middling cotton, with the differences in value compared to middling. All grades above middling commanding a premium—all below, a discount. The premiums above, and discounts below middling do not always remain the same, the variations arising from contingencies uncontrollable, such as rains, winds, and good weather, which give low, medium or high grade cottons to a greater or lesser extent according to the weather obtaining, and if much low grade cotton appears in the markets the

tendency is to widen the differences and lower the price, for when such grades are increased in number while the possibility of higher premiums being offered for the high grades is greater, but when the reverse is true as to the character of the cotton appearing, the differences in the values become changed in the same ratio; that is, much low grade cotton on the market induces lower values, or wider differences in value below middling; a high average or large quantities of good cotton narrows the differences above middling many times.

DIFFERENCES.*

The expressions, "differences in grades," differences in values," are terms used in a relative way which one often hears from those interested in the cotton trade. The expressions are well used and most applicable, and can be readily understood when tabulated statements are shown as here presented, and when once understood are easily remembered.

Recognizing middling as the basis, the other grades and values are easily shown. Say, middling is worth 10 cents a pound, and showing the "full" and "half" grades in the table, and all above middling as "on" or above, and the grades below middling as "off" or below.

*Values other than M. being established twice each year by the New York Cotton Exchange revision committee, are known as the *fixed differences*, while those made monthly by the New Orleans Cotton Exchange revision committee, being based on the value of cotton in the market at the time, are recognized as the *commercial-differences*.

Grades.	Price. Cents.	Price. Cents.	Price. Cents.
Good middling....	10 $\frac{1}{4}$	10 $\frac{3}{8}$	10 $\frac{1}{2}$
Strict middling....	10 $\frac{1}{8}$	10 $\frac{3}{16}$	10 $\frac{1}{4}$
Middling (Basis) ..	10	10	10
Strict low midl'g..	9 $\frac{7}{8}$	9 $\frac{3}{8}$	9 $\frac{1}{4}$
Low middling.....	9 $\frac{1}{2}$	9	8 $\frac{1}{2}$

The five grades shown are sufficient to explain the *differences* in *grades* and the three different prices shown will illustrate the idea of differences in *value*.

In the first price column the difference in value for strict middling above middling is $\frac{1}{8}$ "up;" for good middling $\frac{1}{4}$ "up;" the difference in the second price column for strict middling above middling is $\frac{3}{16}$ "up;" for good middling $\frac{3}{8}$ "up;" while in the third price column the difference for strict middling above middling is $\frac{1}{4}$ "up;" for good middling $\frac{1}{2}$ "up." In the first price column the price "off" middling, or less than middling for strict low middling in value, is $\frac{1}{8}$; in the second price column, the difference in value is $\frac{5}{8}$ less, while in the last or third price column the difference is $\frac{3}{4}$ less than middling. In the first price column for low middling $\frac{1}{2}$ is "off" in value, while in the second and third price columns 100 and 150 points (1 and 1 $\frac{1}{2}$) are taken off respectively, in giving the relative value for this grade.

It is not unusual to see these differences applied on low middling grade, but the differences as shown here for strict low middling are out of the line of the ordinary, and are given here for purpose of explanation only, especially the one showing $\frac{3}{4}$ "off" for strict low middling.

While weather changes are unavoidable circumstances that produce varieties of grades, and are instrumental in determining in many instances relative values for them, a committee known as the Committee on Revision of Quotations of Spot Cotton of both the New York and New Orleans Cotton Exchanges, exercise the right to revise the price of relative grades, saying how much difference in price shall be put "on" or "off" middling cotton, thus two factors are conducive to changes in relative values; the character of the cotton gathered as to an excess or scarcity of foreign substances, and the action of the Revision Committee, whose deliberations and decisions are governed by the type of cotton, "state of the market" and the actual price for which spot cotton has been sold in the market during the day (New Orleans).

REVISION COMMITTEE OF THE NEW YORK COTTON EXCHANGE.

This committee is one of the most important connected with the Exchange; the results of its deliberations are far-reaching in scope and exercise great power over the market many times, and it has been alleged that in the performance of its functions, it has at times gone beyond its legitimate bounds by creating differences too broad, relative values too abnormal to be salutary to the trade.

It is not the purport of this volume to assert or deny the truthfulness of such allegations, but only to assert the existence of such a committee, the character of its duty, commenting only on the results of its actions.

Quoting from the Charter, By-Laws, and Rules of the New York Cotton Exchange, the duties of the Revision Committee are clearly set forth in

Sec. 67. The Committee on Revision of Spot Cotton shall consist of seventeen members, representing the various interests of the Exchange. At any meeting of this Committee ten members shall constitute a quorum. If no quorum of this Committee can be obtained, the President shall appoint a sufficient number of members of the Exchange to form a quorum.

The duty of this Committee shall be to meet twice a year, viz.: on the second Wednesday of September and the third Wednesday of November, at three thirty o'clock p. m., and receive a report from the Committee on Spot Quotations as to the state of the market; also suggestions or opinions from any member of the Exchange regarding the revision of spot quotations.

The Committee shall on the day of meeting consider the report of the Committee on Spot Quotations and the suggestions and opinions presented by members, whether in writing or verbally and establish the differences in value of all grades, on or off middling cotton, which shall constitute the rates at which grades other than middling may be delivered upon contract.

* * * * *

Should any day appointed for a meeting of this Committee fall upon a holiday, the Committee shall meet upon the next business day.

Copying from Charter, Constitution, By-Laws and Rules of the New Orleans Cotton Exchange, its amended rule, effective March 3, 1908.

Rule 16. The Board of Directors, at their first meeting after election, shall appoint a standing committee of thirty (30) members, from which committee the Board shall select monthly five members, who shall constitute the Committee on Spot Quotations, etc.

The Committee on Spot Quotations shall make up the official spot market report of the Exchange daily at 2 p. m., except on Saturdays, when they shall meet at 11:45 a. m.; provided that when one or more of the members of the Spot Quotation Committee think that there should be a change in the differences between grades, or in the differences for off-colored cotton and stained cotton, he or they shall notify the Secretary of

the Exchange by 12 noon on that day (except on Saturdays, when notice must be given by 10 a. m.), and it shall be the duty of the Secretary to immediately notify the other members of the Spot Quotation Committee and also the members of the Arbitration Committee on Classifications that the matter of changing such differences is to be considered at a joint meeting of the two committees to be held at 2 o'clock p. m., on the same day (except on Saturdays, when the meeting will be at 11:45 a. m.); eight members shall constitute a quorum; the chairman of the Spot Quotation Committee shall act as chairman, but, in the event of his absence, the members shall choose a chairman for the occasion. A majority vote of the members present of the combined committees shall be necessary to make any changes in the differences between grades, or in the differences for off-colored and stained cotton, and no changes in said differences shall be made except at a joint meeting of the two committees, as provided above, or at the monthly meeting of the Revision Committee, as hereafter provided; provided further, that no one who is at the time engaged in the receipt or delivery of cotton on contract, or who has same in contemplation, either as principal or agent, shall be eligible to act at such meeting; and it shall be the duty of the chairman of the meeting to call attention of the members to this provision before a vote is taken.

The Committee on Spot Quotation, together with the Arbitration Committee on Classifications, shall constitute a Revision Committee, whose duty it shall be to revise quotations on the first Friday of each month, or, should such Friday occur on a holiday, on the first business day thereafter.

* * * * *

The report of said Revision Committee shall constitute the official quotations on the day of its meeting.

The Superintendent of the Exchange shall post upon the boards the state of the spot market each day between the hours of 12 a. m. and 1 p. m.

From the foregoing the conclusion follows as stated in the last paragraph, that an approach is made towards a point where market quotations are made public by some one for cotton, or rather, some one or several, state a price they are willing to give or take for cotton, which prices are posted on the boards

of the great Exchanges and go out over the wires as *market quotations* for futures and spot cotton, creating a desire to know more fully

HOW COTTON MARKETS ARE MADE.

While the rules of the New York Cotton Exchange are not entirely dissimilar to those of New Orleans, they approach so nearly in many respects that a description of the daily working of one, will suffice for both. A description of a day's proceedings on the floor of the New Orleans Cotton Exchange will be of interest to those unacquainted with its inner workings in establishing in the minds of the reader the facts that contribute to the establishing of figures that are placed upon the blackboard in the Cotton Exchange, which figure valuations are flashed over the wires as market values for cotton.

The New Orleans Cotton Exchange opens its doors at 8 a. m. At that time there are posted on the blackboard, reserved for the Liverpool market, the opening prices, then the noon prices and the 2 p. m. quotations, as Liverpool is six hours ahead in time. Members begin to congregate, but no trading in futures is done until 9:05 a. m. At nine o'clock quotations begin to arrive from New York which market opens at 10 a. m., Eastern time, equal to 9 a. m. New Orleans time. At five minutes past 9 a. m. the future business starts for the day by the official call. This is made by the Secretary of the Exchange or the assistant secretary stepping upon the rostrum seizing a wooden gavel and by a blow with it upon the rostrum opening the trading.

He calls out the current month—the month exist-

ing at the time, it being the first trading month, and continues to call all the twelve months, beginning with the existing month, and ending with the twelfth month thereafter.

Each month is called aloud in a way that it can be heard everywhere on the floor, and sufficient time is given until the price for that month is stationary before the next month is called. Every trade made during the call is repeated aloud by the secretary: for instance Smith & Jones sell to Williams & Brown; the secretary would call out, "Smith & Jones to Williams & Brown, one January at 9 cents," and this trade as well as all others, are recorded on the blackboard reserved for New Orleans quotations and there visible to everybody. Besides that, there is one, or, if trading is very active, two Exchange officials standing inside the ring marking down throughout the day until 2:30 p. m., when trading officially closes, every trade that is made in futures, price, by what brokerage house it is sold, and by what brokerage firm it is bought, and the time the trade is made. All this goes on the blackboard and is kept on record in the Exchange office.

A portion of the Exchange floor is set aside for this future business, but is accessible to all members without discrimination. In this portion is the so-called Ring or Pit, a circular structure for the purpose of preventing jamming and confusion among the many brokers who assemble around it to execute their orders.

After the "call" is over, trading across the Ring is done in all the twelve months or "positions" instead of only the month called, and this character of

trading where the membership call aloud their trade across the ring to each other is known as "ring-trading" or "ring trades," and as stated, occurs during the intervals between the opening and noon calls, and noon and close calls. One broker may call out that he wants to sell a March (contract) at 9.03, while others may offer to buy March at 9.02, others may, again, cry out they want to buy May at 9.10, others offer to sell July at 9.18 and so on.

As before stated, if a trade results it is at once recorded and put upon the blackboard. No trading is allowed by private agreement. All trades between brokers for third account must be made by loud outcry across the ring. There is a heavy fine imposed by the rules of the Exchange for any violation of this rule, going as far as suspension from business, or expulsion from the Exchange.

If the secretary calls a month during the official calls and no one offers to trade during the time the month is called out three times, then he knocks it down as "None."

If some one offers to buy at a certain figure, but no one offers to sell, he calls out, say, "Smith & Jones, January bid 9 cents," and after having called this out three times, he knocks it down as January bid 9 cents and vice versa, if a broker offers to sell, say March at 9.03, the secretary making the call cries out, for instance, "Smith & Brown, March, offered at 9.03," and after having done so three times he knocks it down as, "March, offered at 9.03."

The call in any position (month) is over when the price does not vary any more after having been called

three times, marked each time with a blow from the gavel.

Brokers in offering to buy or sell contracts are governed by the prices their customers make for them in many instances, but if no price accompany the orders and are not restricted as to limitations of them, then they exercise their own judgment to do the best they can for their customers. The broker has to consider the showing of the other markets such as New York, Liverpool, Bremen, etc., the general tendency, speculative feeling, other news at hand that can be construed as guiding factors, in fact, any and everything that could influence the trading, and it is apparent that everybody else is doing the same thing, the execution of the deals are *said* to be governed finally on supply and demand of contracts for the month or months he has to deal in. If he finds no buyer at the price at which he offers to sell, then he has to come down until he meets the demand, contrarily, if he finds no seller at his bid, then he bids up until he meets the supply. So far as a literal transaction is concerned there is no difference in the theory of a trade whether in actual cotton or in futures. Trading in futures are said to be elements that facilitate exchanges in actual commodities.

The New York and New Orleans Cotton Exchanges are chartered institutions, entirely independent in their relationship, and trading in futures on either Exchange is not controlled by any stipulated agreement between them. The prices recorded in New York or Liverpool have a significant influence in determining trade quotations on the New Orleans Exchange. If Liverpool is higher, it reflects a buying

power or buying disposition there. If New York is lower, it may mean that some cause has created a preponderance of sellers, and so on. If Liverpool or New York show higher markets, more buying orders drift to the New Orleans market, if this market has not responded at once to the other market advances, but when an influx of orders from the other markets or any source pour into New Orleans, this stimulus causes an advance there, and should the New Orleans market make an important move, the trade in the North and abroad is likely to consider it and give orders accordingly, which find expression in the prices recorded in New York and Liverpool.

Exchange Market Quotations.—Members of both the New York and New Orleans Cotton Exchanges affirm they do not *make* quotations as cotton values, but instead, the prices are made by the buyers and sellers of orders themselves through their brokers on the Cotton Exchanges. It will be noted in the preceding, that brokers are called upon at times to exercise their own ability and judgment in saying what shall be the price to sell or buy a March, June or August contract, when, especially, a buyer or seller has given them no price nor limit, then it is certainly evident upon its face that in this instance the broker is instrumental in making quotations for futures. Now, if Williams & Clark of Liverpool transmit an order to a broker on the New Orleans Cotton Exchange for the purchase of 5000 bales of May cotton at, say, 9 cents, and the broker succeeds in buying it at that figure, then the Liverpool buyers are instrumental themselves to that extent in making the market quotation, although they may be spinners, manufactur-

ers, brokers or cotton merchants; likewise some speculator or manufacturer may think the market already high, and place an order with a New Orleans broker to sell 1,000, 5,000 or 10,000 bales of May cotton at 8.95, then in this instance this seller proves to be a factor inducing a decline in the market and to this extent is instrumental in affecting quotations, if his sale can be made at the figure offered. In such instances when the opinions of individuals differ as to the future of the market, some thinking an advance will occur, others believing the market about as high as it will go, for the time at least, and when such opinions are about equally balanced between those operating on the Exchanges, the market is said to be very stable, as those who think it should go higher ("bulls") can not well push it up because of the fact of the adverse element ("bears") those who think it should go lower—constantly offer to sell on all advances and in this way prevent an advance and make an equilibrium.

When the opinion is prevalent universally that causes exist which within themselves so materially affect the output of cotton that an advance is sure to manifest itself, then everybody wants to buy cotton and buyers bid freely and above each other to get it, in so doing their own efforts induce higher values, and such manipulations sometimes carry the quotations to an abnormal limit, that is abnormal as construed by the buying (consuming) element.

Facts exist sometimes that are so conclusive that an advance in prices can not occur, which so affect those operating on the Exchanges or independently, they

all become "bears" and operate on the *short side, and the market constantly declines until it reaches a point where the consumer will take it at the prices offered and when this consuming power is sufficient in strength to absorb all offerings then the market declines no further, and equally so in a correlative way, where the buying power is constantly advancing quotations, a limit on the advance is reached when the cotton nor a contract for it can be sold at or above the quoted figure, then we logically conclude that the consuming powers act as a throttle valve in governing finally the determination of prices for both spot and future cotton—the final arbiters in the matter.

Prices offered by buyers and sellers for futures are recorded on the Exchange board and recognized as quotations for futures, and on these future quotations the prices of spots (spot cotton) keep in line, that is, if futures advance, spots follow: if futures decline, spots respond, but spots do not always make the same degree of advancement or decline that show in future fluctuations.** These recorded prices for future quotations as shown on the three great Exchanges, are indicative of what is going on in the cotton world; taking the Exchanges as barometric indicators of the cotton trade.

¹⁹³
*See page ~~263~~ for fuller explanation.

**For getting the value of spot cotton on any market as shown by the Exchanges, see page 268.

CHAPTER III.

EXCHANGES.*

The word "exchange" means literally to swap, barter one thing for another, give value for value, and when so used is non-restrictive in sense with a verb signification, but in this work the word is referred to as a noun denoting a place where cotton business is transacted.

To transact a business where commodities of one class are exchanged for another, more especially those pertaining to agriculture, it is quite essential and certainly preferable, that a place be established most convenient to all, where such transactions can be had with best inducements that can be offered to facilitate trading and that with least expense.

By virtue of an unwritten law in most all instances, as well as municipal legislative enactment in some, every hamlet, village, town and city in the South has set aside certain streets or parts of them, squares and places, where the grower may come with his cot-

*The rules of the New Orleans Exchange prescribe no definite number constituting its membership, nor is the initiation fee stated, but the annual dues are \$100.

The membership of the New York Cotton Exchange is limited to 450 members; initiation fee \$500; the annual dues are such as "may be fixed by the Exchange," and "levied from time to time by the Board of Managers."

When a sale of the rights of membership is ordered, it shall be "posted for ten days on the bulletin of the Exchange," and sale made "to the highest bidder at open outcry," the results of such sale often reach high into the thousands of dollars.

ton to market and offer it for sale; where the buyer meets the seller, and where sales are consummated; here the seller can sell his bale of cotton on his wagon; sell one to be picked next week, or sell his whole crop, whether few or many bales, by agreement with the buyer, and deliver in one, two, or three days, weeks or months; here the seller knows to be the place where he is to offer his cotton for sale; here, the buyer's interests are centered and here is a legitimate *exchange* place.

Such an exchange has no rules as governing factors, further than the sanction of custom. It has no membership, and there are no plans nor prices for initiation. The sellers and buyers are its patrons.

The character of such an exchange is familiar to all, and while it is commonplace, the importance of such a place where cotton transactions can be had can best be verified in a negative way and show its value with more emphasis.

While such places are usually without shelter and not recognized by a large percentage of dealers as an exchange, yet the purposes for which they are allowable fulfill its requirements in all particulars except transactions in future contracts, in contradistinction to dealings of such character on the New York and New Orleans Cotton Exchanges, or any other organized Exchange.

It is said, "You never know the value of water until the well goes dry," so, negatively we do not know the value of an open street exchange, until deprived of it.

Suppose John Smith comes to Smithville, a town of 2,000 inhabitants, to sell three bales of cotton, and

is met by the city marshall, and told he can not sell his cotton on any of the streets of Smithville. "How and where can I sell it?" asks Smith. "Outside of town—any where you can," the marshall replies.

Now, if there is no place outside of town, only the broad country, with no definite location, where cotton can be sold, where seller and buyer can meet, what would be the result? Mr. Smith would evidently leave very much angered, resolving, no doubt, never to bring another bale of cotton to Smithville, determining to sell his cotton in future at other points, but should he go to any other place and find the same thing to obtain as confronted him at Smithville, then he could and would recognize at once the necessity of a *place* where he, and all growers of cotton, could meet with buyers, for the definite purpose of negotiating cotton sales.

Were it possible that such a condition could exist, the results would be more far-reaching in their actions on the business interests of a country, than the confusion reflecting on the individual—in the one, his own interests are jeopardized, while that of the other is broad and sweeping, affecting the public in its entirety.

The character and description of such places of business, while to a large extent perform the functions of an exchange, are quite different from the New York or New Orleans Cotton Exchanges—the only two leading Exchanges dealing in futures in America.

On this local market place for the sale of cotton anywhere in the South, the vendor can offer directly his own productions for sale, or assign his interests to any one he may choose to act as agent or representa-

tive for him; any one desiring who may be able to command the means or credit, can enter such a place of business as a dealer in cotton, exercising his own judgment and business sagacity to guide him in his efforts to establish a lucrative business, provided, in some instances he conforms to the legal requirements exacted by some of the States, as the payment of a special or occupation tax, etc. Barring this form of minor restriction, any one competent to classify and "figure" cotton can seek such business for himself, cognizant of the fact that he is not subjected to any rules or regulations further than that of propriety, business acumen, and integrity of purpose when guided by honest intentions and moral ideas.*

Origin of Exchanges.—It would seem from a careful perusal of the foregoing that the primitive form of marketing cotton described should have been instrumental in creating a tendency to the establishment of the foundation of a system of marketing cotton as that carried out today through the medium of the great Exchanges, but from the evidence adduced from members of the Exchanges, from its records and other sources, that the origin of the Exchanges came from deals embodying features known as "futures"—contracts calling for delivery of cotton at some future time designated.

History.—**Future trading in cotton, in the modern acceptance of the term, is of comparatively recent origin. Up to about forty-five years ago future sales of cotton were

*This is certainly an evidence of the necessity of some form of exchange for legitimate trade.

**From report of the Commission of Corporations on Cotton Exchanges, Part I, pp. 39, 40, 55 and 56, but had to be bought outright as a speculation.



virtually unknown. There were practically no short sales—that is, merchants at this date would not contract at a time when they had no cotton on hand to supply a spinner with his requirements at some future date and run the risk of not being able to secure the cotton in the meantime. Instead, spinners, both in this country and abroad, usually accumulated large stocks of actual cotton for their future needs. Indeed, at this time an extensive system of forward or future contracts was almost impossible, owing to the lack of adequate means of communication. The first successful Atlantic cable had not been laid and the telegraph was still in its infancy, while the telephone had not been invented. It is true that future transactions in cotton were made during the Civil War, but it appears that the price at which the cotton was secured was considered of less importance than the certainty of getting the cotton at all, and there was nothing like what could be called a future system at that time.

There can be no doubt that the extremely unsettled conditions which prevailed just after the close of the Civil War had much to do with the development of the future system. With many plantations in the South ruined, the cotton crops of that period were comparatively small. The average crop in the United States for the three years ended in 1861 was over 4,400,000 bales, whereas for the four ended in 1869 the average was only about 2,500,000 bales. Prices in the latter period were extremely high, and owing to the unsettled state of affairs, and particularly of the currency, fluctuations were violent. The spinner who was about to contract ahead for the sale of his cotton goods was unwilling to depend upon day to day purchase of cotton at widely varying prices, and yet was unable to buy his entire wants at once in the spot market. On the other hand, the cotton merchant was anxious to dispose of his stock when prices touched a high level and to sell an additional quantity at such high levels for more distant deliveries, relying upon his ability to secure the cotton in the meantime at lower prices. The two parties in the market were therefore both ready for some system by which they could go beyond the narrow limits of the moment. Both were, in other words, ready for organized future trading. The introduction of the future system was undoubtedly hastened by the remarkable improvement in means of communication and transportation which occurred just at this period, particularly by the extension of telegraphic service and the successful operation of the trans-Atlantic cable. A manufacturer in Fall River or Liverpool who was offered a long term contract for the delivery of cotton cloth, and who formerly might have

declined it unless he was fortunate enough to be carrying a large supply of cotton, was now in position, by utilizing the future system, to contract for his requirements of raw material on short notice. The willingness of sellers to enter into such contracts was increased by the same causes, and furthermore by the fact, explained in the next section, that the risk of such operations was greatly reduced by the very nature of the future system itself.

A further important fact was that the new system greatly facilitated speculation. Hitherto speculation in cotton had been mainly on the buying side, and was in the form of an accumulation of a stock in anticipation of an advance in the price. The future system, through the opportunity which it afforded for forward or short sales, enabled speculators with an equal facility to sell cotton at a time when they did not actually possess it, in anticipation of an expected decline.

Under these conditions the development of the system, as just stated, progressed rapidly. By 1868 future sales had become a distinct feature of the cotton business.

About this time dealings in future contracts were regularly reported in the leading trade journals. With this rapid development of the business came the organization of cotton exchanges.

The advantages of the future system were so apparent that dealings in future contracts increased with great rapidity. During the period from January 1 to August 31, 1869, the total sales of such contracts in the New York market amounted to 101,665 bales as compared with 873,563 bales of spot transactions. A "spot" transaction is one made from goods on hand, and which calls for practically immediate delivery.

In the next crop year, during which the exchange was organized and a regular form of contract adopted, dealing in these forward deliveries aggregated 591,586 bales, as compared with 616,410 bales of spots. In the year ended August 31, 1871, there was an enormous increase in the volume of future trading, which reached a total of nearly 3,000,000 bales, as compared with 733,905 bales of spots.

This remarkable increase in the volume of business created a necessity for the establishment of rules and regulations for its systematic conduct, and this in time led to the organization of cotton exchanges.

The New York Cotton Exchange, the first of these institutions in this country was organized on September 7, 1870, as a voluntary association; in April, 1871, it was incorporated under the laws of New York. Shortly after-

wards cotton exchanges were organized in various Southern cities. The New Orleans Cotton Exchange was formed in January, 1871; the Mobile Cotton Exchange in December of that year; the Galveston Cotton Exchange and Board of Trade, the Savannah Cotton Exchange, and the Charleston Cotton Exchange in 1872, and the Memphis Cotton Exchange in 1874. Among other cotton exchanges may be mentioned the Houston Cotton Exchange and Board of Trade, the Vicksburg Cotton Exchange, the St. Louis Cotton Exchange, the Augusta Exchange and Board of Trade, the Norfolk and Portsmouth Cotton Exchange, the Little Rock Board of Trade, and the Shreveport Cotton Exchange.

Further elucidating this history, we again quote from the same authority.

Before the Civil War the cotton business in New York was simply one form of old-fashioned commission business, exactly like the business of handling molasses, sugar, hides, wool, country produce, and many other similar agricultural commodities.

The Civil War completely upset the regular conduct of the cotton business in New York, as just described. While it lasted there were, of course, no regular shipments of cotton to New York from the South, and the only source of supply consisted of lots of cotton which the Government from time to time got hold of through capture of blockade runners, or through confiscation in the South. Naturally such lots of cotton could not be handled on a commission basis.

The huge profit made by some of those who bought this Government cotton was the real beginning of general speculation in cotton in this country. And the same thing happened across the water, in Liverpool. The fierce demand and the uncertain and inadequate supply gave opportunity for vast and sudden profits, such as has never been seen before or since in connection with any commodity. And, curiously enough, it was out of this wild speculation of the time of the Civil War that the entire modern method of handling the cotton business was evolved, for, in their eagerness to get hold of cotton, speculators began to buy not only actual cotton on the spot in New York or Liverpool, but "cotton to arrive," when they got wind of a lot of cotton on some ship destined for one or the other of those ports. Here was the beginning of the system of trading in cotton futures, which has gradually revolutionized the whole cotton business in every root

and branch, for certain very clever men, whose business was that of cotton merchants and not speculators, saw a way to make use of the extensive trading in contracts for "cotton to arrive" as a protection to themselves in their legitimate buying and selling of actual cotton.

It was two or three years after the Civil War that this new conception of the cotton business took shape in the mind of one of the most brilliant cotton merchants the world has ever known, the late Mr. John Rew, of Liverpool, whose firm is still in existence. In 1868 or 1869 Mr. Rew saw that the newly laid Atlantic cable made it possible for a cotton merchant in Liverpool to ascertain with unheard-of quickness the price at which actual cotton could be bought in the Southern States and the approximate date at which it could be shipped to England. He saw also that the price that was being bid in Liverpool for "cotton to arrive" was high enough to enable him to buy the cotton in the South and sell contracts for this same "cotton to arrive" in Liverpool two or three months later, he could enter into the transaction with entire safety, as when his cotton reached Liverpool he could either deliver it to the parties to whom he had sold the contract, or if some spinner was willing to pay a higher relative price than the holder of the contracts had agreed to pay, he could buy back his contracts and sell the cotton to the spinner with the large profit to himself.

* * * * *

The immediate and large success obtained by Mr. Rew in his new way of conducting the cotton business attracted the instant attention of the ablest cotton merchants both of Liverpool and New York; and when a year or two later (in 1870 and 1871, respectively), the Liverpool Cotton Association and the New York Cotton Exchange were organized the best men in the trade had the new *scheme* as the *basis* of their business. Already before the organization of these great exchanges the methods of dealing in contracts for "cotton to arrive" or "for future delivery" had become fairly well systematized. For example, the contract unit had already been made 100 bales as generally put up in the South. The period under which delivery might be made under the contract had been fixed at two months in Liverpool and one month in New York, the reason for this difference being that in those days the duration of an ocean voyage to Liverpool was necessarily uncertain, and it was considered fair that a delivery of cotton out of a vessel arriving at any time during two coupled months should be a good delivery. Hence we have to this day all the trading done in coupled months, that is, May-June, July-August, January-February, etc. In New

York, on the other hand, it was felt that the arrival of cotton could be calculated in a single month, and so contracts for future delivery covered only one month, January, March, July, etc. These details and many others were embodied in the by-laws and rules of the Liverpool and New York Exchanges, and other by-laws and rules were adopted to produce absolute uniformity, equality and fairness in all trading; whether between members of the exchanges themselves, or between members and the public at large. Here, then, at least the cotton merchants who had seized upon Mr. John Rew's new method of conducting the cotton business had all the facilities they required."

*An excerpt from an address by Mr. Arthur R. Marsh, a member of the New York Exchange, before the National Association of Cotton Manufacturers at Washington, D. C., on October 4, 1907.

It will be recalled, in a previous portion of this work a pen-picture, illustrating the manner by which the cotton of the South makes its initial appearance on the streets, squares, etc., in the villages and towns, setting forth the same as legitimate places fulfilling the functions of an exchange.*

To better carry on this character of business on a broader and higher financial plane, came the formation of the organized cotton exchanges of the country, their inception originating from the causes enumerated in the preceding.

The contemplated purpose for the establishing of these exchanges primarily, and, no doubt, ultimately, was conceived to be intentional in executing purely legitimate transactions, and none other, and in its declaration of purposes, the New Orleans Cotton Exchange states in its Constitution and By-Laws:

"The purposes of this Association shall be to pro-

*From report of the Commission of Corporations on Cotton Exchanges, Part I, pp. 39, 40, 55 and 56.

*See page 63.

vide and maintain suitable rooms for a Cotton and Commercial Exchange in the city of New Orleans, to adjust controversies between its members, to establish just and equitable principles, uniform usages, rules and regulations and standards for classifications, which shall govern all transactions connected with the cotton trade or any other articles of trade between its members; to acquire, preserve and disseminate information connected therewith; to decrease the risk incident thereto and to generally promote the interests of the trade, and increase the facilities and amount of the cotton and other business in the city of New Orleans.”*

The declaration of purposes of the New York Cotton Exchange are so nearly similar as to require no insertion here, and the statements of those of New Orleans are fully explanatory for both.

In the execution of trades through members of the exchanges the largest percentage of its volume is directed to that line of business known as “*futures*,” or deals in contracts, the nature of which embody features calling for delivery of cotton at a future date.

It is claimed by its members that the introduction and continuation of such a character of business has given to the trade a well regulated system of handling cotton, especially, for future delivery; has established grades or classes of cotton with definite recognized values; has been instrumental in facilitating transactions between producer and consumer; has practically done away with the old style of consigning cotton to commission merchants to be sold by them

*Article 2, Const. and By-Laws, N. O. Cotton Exchange.

for account of others; has given greater latitude to the markets of the world by bringing into closer relationship with the great cotton interests; has virtually narrowed the range of prices and prevented violent fluctuations, and in this line tended its good offices as an auxiliary in regulating prices at home, which being reflective on the foreign markets conduce to regulation there, and facilitates the operation of basing prices on supply and demand.

These claims are ideal and fulfill the requisites essential to Cotton Exchange pre-eminently.

An analysis of the character of the business actually transpiring daily within its walls would seem to indicate that a wide departure from the legitimate course of the requirements of such an institution has taken place many times.

The basis of its operations being founded on the contracts emanating from it, the forms prescribed for instruments of this kind are here inserted.

The New York Cotton Exchange Contract reads:

NEW YORK COTTON EXCHANGE.

Contract.

New York,.....19....

In consideration of one dollar in hand paid, receipt of which is hereby acknowledged.....
.....have this day Sold to (or Bought from) 50,000 lbs. in about 100 square bales of cotton, growth of the United States, deliverable from licensed warehouse, in the port of New York, between the first and last days of.....next, inclusive. The delivery within such a time to be at seller's option in one warehouse, upon notice to buyer, as provided by the By-Laws and Rules of the New York Cotton Exchange. The cotton to be of any grade from Good Ordinary to Fair, inclusive, and if Tinged or Stained, not below Low Middling Stained (New York Cotton Exchange inspection and classification), at the price of.....cents per pound for Middling, with additions or deductions from other grades, according to the rates of the New York Cotton Exchange existing on the day previous to the date of the transferable notice of delivery.

Either party to have the right to call for a margin, as the variation of the market for like deliveries may warrant, and which margin shall be kept good. This contract is made in view of, and in all respects subject to the rules and conditions established by the New York Cotton Exchange, and in full accordance with Section 92 of the By-Laws.

A portion of this contract form was amended and became operative in April, 1908; it reads:

The cotton to be of any grade from Good Ordinary to Fair, inclusive, and if tinged, not below Low Middling tinged, or if stained, not below Middling stained (New York Cotton Exchange inspection and classification), at the price of, etc., etc.

The following form shows the New Orleans Cotton Exchange contract.

Contract.

New Orleans.....19....

In consideration of one dollar in hand paid, receipt of which is hereby acknowledged.....
.....have this day sold to (or bought from)
.....50,000 pounds in about 100
square bales of cotton, growth of the United States, deliverable from press or presses, railroad depot or depots, in the port of New Orleans, between the first and last days of.....next, inclusive.

The delivery within such time to be at seller's option, in not more than two places, upon five days' notice to the buyer.

The cotton to be of any grade from Good Ordinary (fair color) to Fair, inclusive, and if stained, not below Low Middling, at the price of.....cents
(.....) per pound for Middling, with additions or deductions for other grades, according to the quotations of the New Orleans Cotton Exchange existing on the sixth (6th) day previous to the day on which delivery is due.

It is distinctly understood and agreed that no cotton shall be tendered or received under this Contract of a less market value than Good Ordinary (fair color), and that the receiver shall have the right to refuse all sandy, dusty red or gin cut cotton; dusty cotton being defined under this Contract as cotton lessened in value more than 1-8c per pound by reason of dust; sandy cotton being defined under this contract as cotton containing more than 1 per cent of sand.

Either party shall have the right to call for margin, at the variations of the market for like deliveries may warrant, and which margin shall be kept good.

This contract is made in view of, and in all respects subject to, the rules and conditions established by the New Orleans Cotton Exchange, and in full accordance with Rule 25 of said New Orleans Cotton Exchange.

For the purposes of this Contract, Westwego and Southport are not included as places of delivery.

Signed

Orders given to members of the New Orleans Cotton Exchange to buy or sell a contract for future delivery of cotton, as an agent or broker for the party giving the order, are required to receive the same on the following form:

"Subject to the Rules and By-Laws of the New Orleans Cotton Exchange, make for my account, and as often canceled replace a contract for the sale (or purchase) of one hundred bales of cotton deliverable (or receivable) in July."

ANALYSIS OF THE COTTON EXCHANGE BUSINESS.

On the previous page of this work, mention, and a minute description of a day's business on the New Orleans Cotton Exchange is given.* To acquaint the reader with the particulars concerning the character of the transactions taking place daily in the great exchanges, it is necessary to particularize to some extent. The author believes it is very essential that producers should be enlightened, as well as dealers, concerning the cotton business from beginning to end, and armed with such knowledge, the intelligent producer should be in position to meet any dealer or consumer in the execution of any trade to be consummated, upon equal grounds.

The prices of futures and spots emanating from the Cotton Exchanges, being wired to all commercial centers, affords a basis on which the producer's cotton is sold, and here seems to be the point of contention between the Exchange and the grower, who alleges the Exchange prices are many times fictitious, and the unsophisticated cotton grower should not be

*Page 79.

subjected to the alternative of accepting spurious quotations as a reward for his industry, or not make a sale.

The present system of marketing cotton, whose parentage rests with the New York and New Orleans Cotton Exchanges, is a system over which some commercial interests and the cotton agricultural elements of the South are at variance, the former contending for a perpetuity of the system; the other seeking its destruction; the one contending for the mastery, the other fighting a believed-to-be subordination.

The cotton grower does not alienate himself against the members of any exchange whose deals involve the handling of spot cotton, nor against the member who contracts in good faith to deliver when sold, or to receive when bought, any number of bales of cotton, but does feel that his interests are jeopardized when contracts for cotton are so manipulated as to give fictitious prices to his products on purely gambling transactions.

Contracts are dealt in, similarly, as one would handle stocks, bonds, notes or mortgages, etc., with the exception, that cotton contracts bought or sold through the cotton exchanges are often settled for, by the contracting parties paying a *margin* to settle the contract.

The contract calls for 100 bales or more; the New York and New Orleans Cotton Exchanges will not contract to sell or buy less than that quantity.

If a cotton merchant buys, say, 100 B/C—a contract for 100 bales—through some member of the New Orleans Cotton Exchange, or his representative, at, say, 10 cents a pound, he can pay a margin of \$1.00 a

bale—100 dollars for 100-bale contract—and should the market advance 20 points, the price would then be 10.20 cents a pound, the merchant can close the deal by calling for this 20-point advance, equal to him to 100 dollars. If the contract is closed on this advance, the merchant has received 100 dollars, as a marginal profit, less \$15.00.*

Should the market decline 20 points, equivalent to one dollar on each 500-pound bale (the weight recognized by the exchanges in contracts as a commercial bale), the merchant has a loss of 100 dollars, and the price of his contract stands now to 9.80 cents a pound; should the merchant refuse to pay 20 points more (100 dollars), his contract is canceled and the broker keeps the original 100 dollars paid him by the merchant.

In such transactions the purchaser gains on advances in prices in the market, and the seller loses; inversely, declines in prices cause the purchaser a loss, and the seller, a gain.

Continuing the illustration, when the decline had gone to 20 points, the merchant had a loss in his con-

*Commission \$7.50 to buy, \$7.50 to sell—\$15.00 for both. If the credit rating of the purchaser is not good, or is unknown, a broker will usually sell out the contract on 17 points decline, in order to protect himself, and to secure a brokerage of 3 points; that is, 20 points will cover a margin of 17 points and a 3 point brokerage. If the purchaser's account is beyond question, the broker may carry the cotton beyond a 20-point decline as an accommodation to his customer.

tract of 100 dollars, which he could surrender or protect by paying the broker 100 dollars more. Should the merchant think he had evidence to influence him to believe a reaction was due or would soon occur, and pay the additional 100 dollars called for, his contract would now cost him 200 dollars, that is, the broker would have 200 dollars of his money, and the merchant a contract for 100 bales of cotton; were the market to decline to 9.60, the merchant would be called upon again to put up another 100 dollars, he could do so and protect his purchase, or refusing, his contract would be canceled at a loss now to him, of 200 dollars. The contract price standing at 9.80, the market would have to advance to 10.40 to give the merchant a return of his 200 dollars, less 15 dollars.

In this character of business, where both buyer and seller deal in contracts with the view of making or losing on the deal; where settlements are made by paying one to the other a loss or gain according as the market turns for or against them; where losses and gains are paid by settling for the *differences* in the value of the contracts, and are dealt in with no idea of delivering or receiving the cotton contracted for; where gains are to be had on advances and losses on declines, or vice versa, evidently bears all the features of purely gambling transactions and are certainly reprehensible in the extreme. Such contracts are optional, or "*options*."

It has been stated by some opposing exchange operations, but the author does not give this as official, that fully 65 per cent of the volume of business done in contracts through the members of the exchanges,

consists of that form requiring no delivery nor receipt of cotton on them.

Reasoning from analogy, one would conclude that 65 per cent of cotton exchange business is illigimate, and 35 per cent conducive to beneficial results.

If such surmising is correct, the great cotton exchanges of our country are institutions in which the largest per cent of its business is gambling pure and simple, and to this feature, the attention of our state and national legislatures has been called with a view of having them enact laws eliminating such censurable practices.*

BUCKET SHOPS.

For convenience of those who wish to speculate in the rise and fall of prices in agricultural products or any other branch of industry, whose prices were regularly quoted on the Exchanges and Boards of Trade, suitable places in all the busy marts of America for receiving telegraphic advices respecting market quotations, were established sometime after the organization of the large Exchanges.

The class of business executed in these institutions, to many, was similar in character to that of the established Exchanges.

Cotton Exchanges do not deal in less than 100 bales of cotton on contracts, while Bucket Shops will take orders for 25, 30, 50, 75, 100 or more bales, and in some instances, as low as 10 bales, to satisfy which,

*It has been unofficially stated by some members of the exchanges that fully 90 per cent of the business transacted by these institutions is legitimate.

the prices of the quoted articles from the Exchanges are the factors determining settlement.

Trades in Bucket Shops are not based either directly or indirectly upon actual cotton, as such character of business does not contemplate either the receipt or delivery of cotton on any transaction originating there.

In establishing such places of business it was not contemplated the convening of buyer and seller for the purpose of executing contracts with intentions of delivering or receiving any article dealt in, but instead, those who entered these places for buying or selling contracts, handled them with the view of making or losing, as the prices for exchange values showed advances or declines; that is, its patrons would place their money on a Bucket Shop contract as a dealer at a card game would place his money on a certain card—taking a blind chance to win or lose.

The Bucket Shop is a parasite upon the legitimate Exchanges; its business is detrimental and reflective against them; it is not contributive to the establishment of values, but may injure them intrinsically; to the agriculturist it is of no economic value.

Hazarding money upon a *contract* of the Exchanges, with the idea of gaining or losing by making such deals exclusively for marginal purposes, is practically the same in kind as buying through any Bucket Shop.

For illustration, let it be understood that in Johnstown are two places on opposite sides of the street, one, a place where representatives of the legally organized Exchanges are receiving regularly the quotations from these Exchanges; the representative or representatives being duly authorized to execute contracts for members of the Exchanges, do so in the

regular way, making no contract for less than 100 bales. Customers entering into contract, to buy or sell this amount of cotton, or more, with intention purely, of making money by the rise and fall of prices, eliminate speculation entirely in actual cotton, and the investments are nothing more nor less than bets in any other thing of value.

If John Adams pays to the local broker 100 dollars for 100 bales of, say, July cotton, and John stands in the lobby of this representative Exchange and watches anxiously the prices for the different months as they are chalked on the blackboard, in column form every few minutes; he can readily witness his loss or gain as the figures show to rise above or fall below the price at which he bought; if the purchase price is 10 cents, and the market advances 10 points, he has a profit of 50 dollars; if 20 points, 100 dollars—for every point advance on a 500-pound bale of cotton, there is an equivalent value of 5 cents on the bale—and as both parties have a right under the rules of the Exchange to call for a margin, in this instance John can call for a settlement of the contract at any time he may desire, whether it be for loss or gain; presuming that the market has gone up 20 points and John has made 100 dollars (less the commission of 15 dollars), he, feeling that he has done well, and no doubt giving himself credit for exhibiting marked financial ability, thinks he can do so again, he quits this place of business, steps across the street into a Bucket Shop and again *buys* 100 bales of future cotton, but as he sold his first contract on a 20-point advance in the market, he now buys at the figure for which he sold, or perhaps, a little more, as the market

has advanced, a bullish feeling pervades the entire trading fraternity and John feels equally sure of making a gain here, but as the prices are being placed on the board—prices coming from some of the organized Exchanges—he witnesses the beginning of a decline, and as the declines slightly stop at times, or perhaps again advance a few points to be followed in turn by further declines, this alternating, stimulates him, mixed with hope and doubt, to hang on to his purchase, but the inevitable happens; the market gradually declines to 20 points below his purchase price, when he is called upon to put up another hundred dollars, which he refusing to do, loses the 100 dollars as first purchase price.

Note this: When John made 100 dollars through a deal with a representative of the Exchange, he paid this representative 15 dollars commission, also, paid the same amount for a bucket shop contract, and not only lost 100 dollars, but 15 dollars commission in excess of the hundred dollars.

It might appear that he won 100 dollars in the first instance, lost the same amount in the second, and of the two deals, one exactly offset the other, with no loss to him. As a fact, the 100 dollars gained, did exactly offset the hundred dollars lost, but the cost to secure these two contracts was 15 dollars for each, and the net loss to John, finally, was 30 dollars.

The character of the two deals made by John is identical in both instances; his deals were made with his personal knowledge of the fact that if the market advanced he would gain, if it declined he would lose; they were made in both institutions with no intention, whatever, of delivering any cotton to any one on them,

and were literally gambling bets, nothing more, nothing less.

Thousands and tens of thousands of Johns have been allured into such business for many years; those who were fortunate enough to succeed in winning handsome sums, were lauded as sagacious financiers, while the unlucky Johns, with the influential sympathizers enlisting in their behalf, caused so strong a sentiment to arise against this kind of business, which finally gathering strength as it progressed until its voice could be heard in the halls of the State Legislatures and National Congress, and to help the unfortunate Johns, laws have been enacted in most of the Southern States preventing his patronizing Bucket Shops; outlawing Bucket Shops, and, that he might not "waste his store" in any form of gambling, laws that shall fall as a protective mantle over him have gone farther than the Bucket Shops and assert that he shall not buy or sell a future contract—"shall not gamble in futures"—from any of the organized Cotton Exchanges.

From the foregoing, the inference is drawn, that Bucket Shops are places of gambling, and in confirmation of this we quote from Century Dictionary.

"*Bucket Shop*.—An establishment conducted nominally for the transaction of a Stock Exchange business, or a business of similar character, but really for the registration of bets or wagers, usually for small amounts, on the rise and fall of prices of stocks, grain, oil, cotton, etc. There being no transfer or delivery of the stocks or commodities nominally dealt in.

"Bucket Shop operations are gambling transactions and should be dealt with accordingly."

ORIGIN OF BUCKET SHOPS.

Man's cupidity leads him into investments, where perhaps, no other influence would induce him under similar circumstances to assume the risk or undertaking. This natural propensity evidently was the primary motive that induced individuals to establish this form of business, knowing the gambling instinct or habit existed largely with many, and those caring to assume the risk on varying contingencies, would not hesitate to hazard their money on the rise and fall of prices of anything regularly quoted and given out from the Exchanges.

The New York and New Orleans Cotton Exchanges dealing in no less than 100 bales (about 50,000 pounds) of cotton, for future delivery, the Chicago Board of Trade, no less than 1,000 bushels of wheat, 5,000 bushels of corn and oats, 250 barrels of pork, 250 tierces of lard and 50,000 pounds of ribs, made the initial purchase of any of these commodities beyond the reach of many, and to get that class of investors who would take a risk on a small amount, the Bucket Shop was established.

From a few establishing themselves at first near the great Exchanges and Boards of Trade, they grew in number until they had reached approximately 25,000, scattered in all the States, before the strong arm of the law was evoked for their destruction.

The term "Bucket Shop," originated in Chicago, from the best historical data available, from among members of the Board of Trade, when trading was dull, occasionally some members would call out, "I'll send down to the shop and get a bucket full," refer-

ring to the "Shops" where a *small amount* could be gambled in, so the term "Bucket Shop" has remained to this day as applied to stocks, grain and cotton gambling establishments, in contradistinction to the established legitimate Exchanges.

In their infancy, they wielded but little influence for harm, but their practices having grown to such extensive proportions, their injurious operations became so alarming as to necessitate the intervention of the law for their complete eradication.

It is argued by members of the Exchanges that legitimate transactions in any commodity, maintain and stimulate prices for that commodity whether the transaction apply to dealings in the actual article or for future delivery, such reasoning being founded on good judgment and practical experience as to actualities, but on the other hand, where wagers are posted as to rise or fall in price of any article, no amount of reasoning can substantiate the claim that any benefit can accrue to the price of the article dealt in from this form of manipulation.

To deal in an article, real estate, live stock or any kind of investments, contributes to the stability of prices, but to bet the prices will be up or down tomorrow, next day, or some future time, add nothing in support of valuations.

TRANSACTIONS RECOGNIZED AND ALLEGED TO BE LEGITIMATE ON THE COTTON EXCHANGES.

In the preceding, the author has attempted to make clear transactions emanating from the Cotton Exchanges, the nature of which were expressed as gam-

bling deals; this character of business contrasted with that of a Bucket Shop, paralleling so closely as to be almost indistinguishable one from the other.

Were all the transactions coming from the Cotton Exchanges similar in character and meaning, similar in effect and purpose, as those previously described, it would be an easy matter to establish laws so directed as to effectually close out such sources of gambling opportunities, but as stated in their declaration of purposes, they have a broad field of usefulness when their efforts are directed in legitimate channels.

It would be useless to argue that all members of the Cotton Exchanges are men who would not resort to sharp practices to influence the market to their own interests, or that they are every one of the most unquestioned integrity, who like Caesar's wife must not be even suspected, and no breath of censure should ever touch their immaculate reputations, for in that body are, no doubt, individuals who would not hesitate to utilize any scheme of ingenuity known to themselves to direct trading under their surveillance or influence to the end that it would result effectually to their personal gain financially.

This assumption is based upon the broad idea of human nature, that there is to be found in all organizations composing financial bodies, fraternal societies and even religious orders, unfit material; and reasoning from this view-point a like conclusion may not inappropriately be applied to the Exchanges.

THE CONTRACT BASIS.

The New York and the New Orleans Cotton Exchanges not being associated for the express purpose

of handling spot cotton, although its members may exercise the right to act as spot buyers, brokers or factors on their individual account, its business is directed in the line of future trading; dealing in contracts calling for delivery of cotton at a future date, is maintained for the purpose of affording a convenient method and a ready market for this class of transactions, the utility of which supplying hedging facilities for producers, merchants and manufacturers alike, the hedge operating as an insurance policy, not against the value of the cotton, but a guarantee that the price at delivery time will be the same as stated in the contract when made, thus safe-guarding the holder against fluctuations, and at nominal cost as previously stated, during the time from his purchase of the actual cotton to the time of its final disposition.

For illustration, Williams & Smith, at Tyler, Texas, buy from farmers' wagons, 100 bales of cotton during the first week of September, at an average cost of 10 cents a pound, the market at the time varying but little above or below 10 cents, Williams & Smith who receive the market quotations daily, hope to catch the market at a point on which they can sell at a profit, but after they have secured this 100 bales and the price does not go above 10 cents again, they finally offer it to some other buyer for 10 cents, which price they could not obtain, and as quotation after quotation of the market showed it to be gradually declining, they seek to protect themselves by *selling* 100 bales of futures—100 bales of Marchs, say, for which they can get 10½ cents.

By way of parenthesis it may be stated, it is not

always the case one can sell a near future contract for a margin of one-half cent, but to cover profit, carrying charges, such as insurance, loss in weight, "country damage" and so forth, it is assumed the March contract has been sold at this figure. Unless a decline is anticipated or may seem imminent, a merchant is frequently able to sell a distant contract at a premium, and with such assured premiums, contingencies are overcome to a certain extent.

Williams & Smith can have two options in making disposition of this business.

1. Let it be assumed they are willing to take the one-half cent profit, and to realize this amount without any further loss, take shelter under the hedge. When they sold this contract they sent 100 dollars to a New Orleans Cotton Exchange broker as a margin to protect him, who makes the transaction in the open on the Exchange floor; the 100 dollars is demanded as protection in case the market goes *up*, for they have sold *short*, and advances in price on such sales are losses to sellers. After making the sale of March futures, they immediately sold their 100 bales of spots for 9.85, *losing* 15 points, 75 cents a bale, in other words 75 dollars on this spot transaction; the price of futures in sympathy with bearish sentiment and spots having declined 20 points, also, making a *gain* of 100 dollars on the future deal; on such a transaction the 100 dollars would be repaid to them if demanded, less the brokerage 15 dollars—\$7.50 commission to buy and the same amount to sell, a future contract of 100 bales. In a procedure of this nature, they gained on futures 100 dollars, and lost on spots 75 dollars, and commission 15 dollars—a total loss

of 90 dollars, leaving them a net gain of 10 dollars. This is inferring that the transaction on the part of the Exchange has been legitimate; no revision of the differences on the grades other than middling were had, and relative values remain the same.

2. Williams & Smith can sell their spots, say, at 9.85, accept the same loss on it as just stated in the preceding, and should the market continue to decline, say, to 9 cents, they can order their broker to *buy* 100 bales of futures for them, and with this contract offset the one sold for $10\frac{1}{2}$, accepting the difference in value, $1\frac{1}{2}$ cents, less expenses; or they can hold their contract till maturity, say, January, February or even until March, demand the cotton on it, and tender this cotton to the purchaser of the original contract in settlement for the same, and the same differences in value would accrue to them in this form of settlement as to settle for the difference in value.

It is not usual for dealers in such small quantities of cotton to resort to the hedging function as a protection against a fluctuating market, such advantages being more generally accepted by those firms and individuals whose dealings assume large proportions.

It would be hazardous* for large merchants who buy cotton from customers in various parts of the country, and who sell their holdings direct to the mills, to assume the entire risk of carrying such large amounts without the guarantee given them under the hedge; indeed, the risk would be so great the buyer would no doubt feel inclined to make his offers for purchases, much less than he could afford to pay, than where he can handle with definite prices assured.

See pages 91, 92.

HEDGING FUTURE AND SPOT COTTON.

In the case of Williams & Smith, it is shown how spot cotton can be hedged, held for future sale, or sold at any time desired. The buyer who cares to sell the market short can protect his sales of futures equally as well as spots.

Adams & Jones, Memphis, Tenn., believing from the evidences they have relative to the growing crop, the demands of the trade, that cotton quoted in July at 11 cents is a good sale, *sell* to American and foreign spinners 10,000 bales to be delivered in September, October, November and December following.

They can not fortell with any degree of accuracy what cotton will be worth during these delivery months, but in order to protect themselves, they *buy* 10,000 bales futures, which contracts mature in these months.

When the sale was made to the consumers, it will be noted, they made it direct with each other; a contract having no reference whatever to any Cotton Exchange and entirely independent of it.

This sale being made at 11 cents, is equivalent in value to 55 dollars a bale of 500 pounds, aggregating in amount to 550,000 dollars, and to use such a sum as an investment would be quite perilous, to overcome which, this cotton firm buys the contract mentioned in the foregoing from some broker on the Exchange, and here in this character of trading can well be inserted the usefulness of such an institution, as a factor eliminating risks in transactions in actual commodities.

Let it again be stated that when this sale was made

Adams & Jones calculating a margin sufficient to cover expense of handling and a profit for themselves when closing the trade at 11 cents.

As in the case of selling 100 bales "*short*" previously mentioned, so in this instance, 10,000 bales have been sold "*short*," and to consumers who are to receive the *cotton*, and not a *contract* or contracts, although it is not infrequent that settlements of such business may be had by payment of differences in value of the contracts.

Estimating they buy 10,000 bales of futures at 10½ cents, and as influences affecting prices of spots reflect sympathetically on futures; any advance or decline correlatively reflects on the other.

Let it be assumed the market declines 20 points, it is very evident a loss of one dollar a bale has occurred on this sale for forward delivery, and a gain of one dollar on their "*short*" sale.

To make this clear to those who are not fully conversant with the manner of estimating fluctuations, it will be observed that if the market declines 20 points the price of cotton in the open market has dropped from 11 to 10.80 cents, and a *profit* to the seller, because they can now buy cotton for 10.80, which they have sold for 11 cents—this decline does not affect the price made to spinners, by virtue of their contract they are held to it, equally so, they would not be affected were the price to advance to 12 cents, for the contract would then reflect on the sellers, who are held to a 11 cent figure—were the market to advance 20 points, a loss would appear to Adams & Jones as the price would then be 11.20 and would cost them

one dollar a bale above selling price to buy spot cotton.

To overcome these contingencies, spot buyers, dealing heavily in cotton, take refuge under a hedge bought or sold through some member of the Cotton Exchanges, for future delivery, practically insuring themselves against any loss.

Large dealers who buy cotton faster than they can dispose of it, when so purchased at figures from which the market shows a tendency to decline, protect such purchases by *selling* futures as an offset.

In practice, they do not necessarily sell the exact number of bales they may have on hand, but they may sell any amount in excess of the actual spot cotton, their judgment may dictate.

If Adams & Jones have 10,000 bales cotton in warehouses in Memphis in September, and can dispose of it at a price satisfactory to themselves, to be delivered in some designated future time, say, November, December, January and February, in such an instance the hedge would be entirely unnecessary, in fact, a tax upon the contract, unjustifiable, as the spot cotton is already in hand ready for delivery at the appointed time, and needs no protection further than an insurance policy covering total value.

Spinners and millers manufacturing yarns and fabrics of different kinds, require the use of different grades of cotton and usually contract for their supplies with cotton merchants who handle spot cotton, not caring to depend upon a contract bought through the Exchanges, as any number of grades up to eighteen may be delivered on it.

Suppose a mill requires the use of 500 bales of

middling cotton monthly and should buy that amount of futures through one of the Exchanges, and be subjected to accepting any number of eighteen different grades upon the contract at time of delivery, and out of which it could perhaps get only, say, 100 bales middling cotton, it is obvious it would be forced to pay for 400 bales of cotton of different grades that it does not want, hence, a contract of this kind would prove undesirable to a mill.

Spinners often take advantage of the contract for the future market when they sell their output at good prices, before manufactured, and at a time when they do not have the cotton on hand from which to make the yarns, by protecting themselves with contracts calling for delivery of cotton at future dates.

If cotton is worth 10 cents, and sales of cotton products are made based on such a price, the spinner can sell any quantity of goods he may desire and protect the sale by purchasing future contracts sufficient in amount to cover the sale. In the use of the future contract in these instances the spinner has the same protecting advantage as the spot cotton dealer who protects his cotton with futures. If the price of cotton declines he loses on the contract bought, but can buy in the open market, spot cotton at a decline, the manufactured article from which was sold on a 10 cent basis gives a corresponding gain; the decline in futures is practically offset by the purchases of spots at an equivalent decline, and the profit on the manufactured goods remains undisturbed.

The spinner in this case has used the contract for a hedging purpose only, and not with the view of receiving cotton on it. He can, if he desires, carry

the contract to maturity, should the market justify him, receive the cotton of different grades, re-sell it, and buy with the same money the number of bales of the required class suitable for his purpose.*

All things being equal, in a normal way, the preceding describes briefly the manner in which spot or future deals may be eliminated from a field of speculation, the adventure being deprived of doubt, renders the profit safe and sure.

This universal guarantee to the dealer who invests large sums in cotton, proves quite advantageous to the trade and affords such a protection to the dealer as to be almost incalculable.

The preceding brief illustrations are founded on the idea that all proceedings as given are strictly in line with the rules and regulations of the Exchanges and are legitimate in scope and character.

As a component part of the present system of handling cotton, the right of contract for future delivery seems so closely related as to be an inseparable quantity; a factor, as a known agency, indispensable to the successful operation of a business in spot cotton requiring protection through the hedge.

The hedge would always be a counterbalancing feature were the prices of spots and futures to maintain their relative equilibrium, and any loss on the one would be exactly overcome by a gain on the other, but as the price of futures are at times so greatly at variance with that of spots, the hedge offers only a partial cover, rendering it in such instances, of feeble

*It should be remembered that in taking up a list of cotton on contract, M. basis governs, and relative grades received are taken at their grade value.

import as a protection in spot cotton transaction. Investments in cotton protected by hedges are subjected to influences that change their value—worth more today and less tomorrow—until a parity exists between spots and futures, the agreement of which protects the hedge.

In this case the premiums or discounts on futures are the causes affecting the stability of the hedge.

The foregoing statements descriptive of the utility of the hedge in connection with spot cotton transactions are some of the ways in which it is most universally used.

The cotton grower; the wholesale merchant carrying in stock large lots of cotton goods; the importer dealing in fabrics composed largely of cotton; the retail merchant who may have his shelves loaded with high priced merchandise, of cotton manufacture, all, can take refuge under a future contract hedge.

It is very rare to see a grower, or retail merchant avail himself of the opportunity to secure himself against loss, by means of a future contract, owing no doubt, to the prejudicial idea that this kind of business is morally wrong, and approaches so closely to gambling in its nature as to preclude its usefulness as a legitimate factor in conservative business, in their opinion, also, a want of a thorough understanding of the real functions of a hedge, as well as the initial cost to “get in” on such transactions, act as influences in preventing many from utilizing its availability.

BUYING AND SELLING FUTURE CONTRACTS.

John Adams having figured conspicuously in buying cotton from representatives of the Exchanges and

*Bucket Shops as will be remembered in the preceding, let us get at the particulars by which he "got in," or made his first investment.

The statement there, was, that he made his purchase from a *representative*, and not a *member* of the Exchange, now for purposes of illustration it will be assumed that he bought direct from a member (firm) of the New Orleans Cotton Exchange, Messrs. Smith & Jones, and that John resides in Winona, Miss.

Future cotton in New Orleans for October, 1909, was quoted at the close at 10.75-76, May 13th, and John thinking the market will still advance, wires something like this:

"Winona, Miss., May 13, 1909.

"Messrs. Smith & Jones,

"New Orleans, La.

"Buy for my account 100 bales October at 10.75.
Check to cover by mail.

"JOHN ADAMS."

If John is known to be reliable to Smith & Jones, the purchase would be made at once, or as soon as the order could be executed. If unknown to them, they would require some information respecting his ability to protect the purchase, either in cash, confirmation by some bank or well known reliable firm, or bank guarantee.

Where cash is used, John would remit any amount he might be able or desire to invest, to some bank in New Orleans, and check against it when he sells or buys futures, or deposit in his home bank 100, 200,

300 or more dollars, and when trading as indicated by the foregoing wire order, have his local banker *guarantee* the amount to some New Orleans bank, at which bank Smith & Jones could get their money for making the purchase.

Where parties do not have satisfactory credit ratings, depositing the money in some bank prior to investment, or bank guarantee, are the more preferable plans for securing the broker making the deals.

*Members of the Exchange often make deals for one another, who are bankers, merchants, exporters and traders and frequently pay no commissions.

Parties well known, whose financial standings are of undoubted integrity, and who are in many instances largely interested in spot cotton, have no trouble in having orders executed on short notice, without an immediate remittance.

Presuming John's order is all right and accepted, he will receive a reply something after this manner:

"John Adams,

"Winona, Miss.

"We have this day bought for your account, in the New Orleans market, 100 bales of cotton for October delivery, etc., at 10.75. Margin received on the above, 100 dollars.

"Yours respectfully,

"SMITH & JONES."

This reply received on a printed slip, filled in by hand or typewriter, is the *evidence* John has, showing he has bought 100 bales of future cotton.

*See Latham Alexander & Co. in pamphlet, "Important to Merchants and Planters," 1908, page 33.

The reader should notice that John does *not* receive any contract, nor any copy of one, but instead only the notation on the printed form, just mentioned. Unless he carries this contract to maturity, and goes to New Orleans for the purpose of receiving the cotton on it, he will *never* see the contract nor a duplicate of it.

Should he or his agent visit New Orleans to accept the cotton on contract the contract would be turned over to him on payment of the cotton as represented by its weights and grades, and in accordance with the rules of the Exchange.

The party who sold the cotton to him has the right under the rules to deliver any number of grades (18), from good ordinary to fair,* inclusive—this repetition of delivery grades being inserted here for clearness and emphasis.

The broker selling the cotton to John will make up an invoice of the 100 bales, showing class and weight of each bale, and when so made and presented, the money in payment for the cotton is due.

John has the right to reject falsely or mixed packed bales, unless they were sold to him as such, “also, any cotton lower in grade than the lowest grade presented in the seller’s samples.” He has the right to reject any bales weighing less than 300 pounds; any bales with more than 6 iron bands, exceeding in weight twelve (12) pounds in the aggregate on uncompressed bales. Anything in excess of this weight (12 pounds) shall be deducted by him, or the extra band removed.

When compressed bales are delivered as spot cotton,

*See contract, page 74.

no deduction will be made for the seventh band, but three (3) pounds will be added to the gross weight.

Any amount of bagging in excess of seven yards, weighing two and a quarter pounds to the yard, shall be considered unnecessary, and shall, at the *seller's* option be removed from the bales before weighing, or an allowance for the excess weight granted.

Side pieces, half the width of the bagging, running the entire length of the bale, are not considered as unnecessary, "and shall not be removed without the authority of the parties in interest."

It is the duty of the seller to have the cotton re-weighed in the presence of the buyer's re-weigher. Should the buyer's re-weigher not appear at the appointed time and place for weighing, after having been duly notified the seller shall delay two hours, after which he "may proceed with the weighing without the presence of the buyer's re-weigher."

Should damp or wet cotton be tendered, John can reject its allowance in so far as dampness appears, and if both buyer's and seller's re-weighers can not agree as to amount of excess weight for dampness, *buyer's* re-weigher can demand the cotton not be weighed until dry.

Should John doubt the accuracy of the scales, he may have the Chief Surveyor look after them with the view of correcting any deficiencies, should any appear.

After the cotton has been weighed both parties agreeing to its classification, and final payment made, the delivery is recognized as complete.

This homely illustration is given to show in a clear and concise way, the manner in which future cotton contracts are carried to maturity and actual cotton

delivered on them in compliance with their stipulations.

SPOT HOUSES REFUGE.

Spot firms doing a legitimate trade in actual cotton which is supplied to mill concerns directly by them, protect such purchasers with hedges from contracts secured through the Cotton Exchanges.

Consumers who depend on Spot Houses for their requirements, seek reliable firms for the fulfillment of their contracts, and such firms making purchases in satisfaction of these contracts, protect fully 80 per cent of them with the hedge, leaving the minimum percentage in actual deals without a hedge, 20 per cent. *

This refers to those firms who are daily in the market, and whose operations from day to day are confined to a spot business, and on whose calculations and quotations the interior buyer bases his prices to be offered to the grower, and how those houses in the legitimate channels of trade secure their requirements in fulfillment of the demands of the spinners, from initial points, is exhibited in the following:

*This information is official.

CHAPTER IV.

BUYING SPOT COTTON.

To complete the details of how the great American cotton crop is handled; how it is moved from first hands—the growers—to its final destination, it becomes necessary to describe all the transactions, which are literally confined to a spot business, in addition to those previously enumerated as set forth in future operations in connection with that of spots.

When it is remembered that the cotton crop is grown by hundreds of thousands of farmers in the South; from the most ignorant negro with his one, two or more bales, to the most intelligent culturists who grow from five, ten, a hundred, and in some instances a thousand or more, it can be seen what a great variety of customers are to be dealt with in a business, the aggregate of which reaches into hundreds of millions of dollars annually in the Southern cotton belt.

The present system having been developed through a series of years is well known to all growers who offer cotton for sale in its regular season, a process very simple in its nature, but as to the intricacies and multifarious operations enveloping the business in all its ramifications, the public apparently is not so well informed.

Many intelligent growers seem to exercise but little forethought in marketing their cotton, offering it any time it may suit their fancy, regardless of the

condition of the market, the demand of the trade, or want of it; heedless of the price, whether high or low.

Many farmers make a practice of selling their crop as fast as gathered; others adhere to the idea of selling a portion each week, or month; still others withhold their entire crop until all is gathered and sell late in the season or early the in-coming year.

A small percentage, comparatively, consign cotton to reliable commission merchants to be sold by them for the account of the grower, not caring to trust the disposal of their own products in their own hands, or hoping to attain better results through a commission agency.

To fully understand the present system of gathering cotton from the growers in all districts, near or remote, it is deemed best to follow the plans adopted by some of the leading spinner and export buyers.

What may be said of one will answer for all, as the entire buying fraternity operating on a large scale, whether buying in fulfillment of orders, on personal or firm account for speculative purposes, or in completion of contracts previously made, the plan is the same, or so nearly allied as to admit of little distinction, whether the buyers are operating in Tennessee, Georgia, Mississippi, Texas or any other cotton producing State.

Acting upon this idea as a base, the reader's attention is directed to the business system of some of the large cotton firms now operating in Texas.

A REPRESENTATIVE COTTON FIRM.

The principal offices of the firm in question are, say, in New York and Liverpool; the membership compos-

ing it are also members of the New York and Liverpool Cotton Exchanges, and all the other principal Exchanges of the world.

This house is one of the largest buyers of spot cotton in the world, and the character of business transacted by it in spot cotton, as before stated, is indicative of the manner in which other firms operate.

It has direct connection with foreign markets, through branch offices in Bremen, Germany, Havre, France, and many other cotton spinning or distributing centers, giving it great advantage in securing a broader outlet for the disposition of its holdings or acquirements.

It can be stated appropriately that a large percentage of all dealers handling large investments in cotton are directly or indirectly represented in foreign markets by and through which medium greater facilities are offered for securing prompt sales, and enabling such dealers to be almost constantly in the market.

For example, take a firm that has branch houses located at the principal interior markets, say Waco, Texas, as an illustration.

Contributory Territory.—It may be stated that adjacent towns handling cotton which finds exit through the Waco district office are among others, Oglesby, McGregor, Crawford, Clifton, Valley Mills, Meridian, Morgan, Whitney, Blooming Grove, Corsicana. Hillsboro, West, Hubbard City, Marlin, Bremond, Lott, Eddy, Lorena, Moody, Temple, Cameron, Belton and other towns on the San Angelo branch of the Santa Fe Railway, and many others.

At some of these points the Waco firm or office has salaried men, whose duty is the buying of cotton. ex-

clusively, through the season; at others it has representatives who receive the daily quotations from Waco, and buy on these quotations for the percentage of profit they can make, using the quotation as a base upon which to buy, the difference in the quotation given and the price at which they can buy, being the margin of profit to accrue.

Let us assume that John Anderson represents the Waco firm at Valley Mills, and is attempting to make his wages by the margin he can gain on the purchases handled by him.

In the first place, in order to obtain a working basis, the Waco house is in close touch with both the New York and New Orleans Exchanges, from which it receives constantly through the day, the quotations for both futures and the price of spots at the close of the market. From the future quotations it calculates a basic price to be given all correspondents contributing cotton to it.

All places stated, being in "common point territory," take the same freight rate to Houston and Galveston.* From the port price the freight, expenses of handling the cotton is deducted which leaves the quotations for interior points.

Both the New York and New Orleans Cotton Exchanges recognize certain future months as "hedging months," that is to say, from such months basic prices for spots are calculated as the ruling spot prices for any interior territory.

In May, 1909, the governing months—the months most actively dealt in—were July and October, and

*Foot note page 106.

stating July futures as being quoted at 10.78, say May 12th, from such a figure a working basis would be calculated something after this manner:

July futures.....	10.78
Good middling premium....	35 points better

Good middling value N. O... 11.13

Taking Galveston as a port price to be calculated with New Orleans good middling value.

Then we have this value.....	11.13
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Freight to Galveston (per hundred) ..	.55
---------------------------------------	-----

Brokerage03
---------------------	-----

Expenses and margin for profit.....	.12½
-------------------------------------	------

Points to be deducted.....	.70½
----------------------------	------

Good mid. value at interior points...	10.43½
---------------------------------------	--------

Good middling value.....	10.43½
--------------------------	--------

Less for middling value.....	.37½
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Middling value at interior points.....	10.06
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The comparative value of actual cotton with futures varies frequently according to spinners' demand, but this example shows the transaction when spots and futures are running together.

Getting this middling value for all interior points taking the 55 cent rate, the Waco house would give to all its correspondents a basis of about 10.06¼ or 10.1⅙. That is, it will take all cotton its repre-

*Galveston 55 cents per hundred; Houston, 49 cents per hundred.

sentatives buy at this figure for middling cotton and any correspondent buying on this basis would necessarily have to buy at a lower figure to gain a margin for himself.

This price would be net to the buyer at his place of buying. The grades above and below middling in value would bear a premium or discount quoted to them by the Waco firm.

Adding for strict middling $1\frac{3}{8}$ and for good middling $3\frac{3}{8}$, would make these grades worth $10\frac{1}{4}$ and $10\frac{7}{8}$; deducting for strict low middling $1\frac{5}{8}$ and low middling 100 points, would give for these lower grades $9\frac{3}{4}$ and $9\frac{1}{8}$.

For practical purposes these five grades will suffice to illustrate the idea intended.

We will suppose Mr. Anderson receives the above "limit" as the opening price for the day; if perchance, a grower had driven on the streets of Valley Mills, with 3 bales of cotton on his wagon before nine o'clock in the morning, offering his cotton to any buyer who would give the highest price; whether there were one or more buyers at this place, the grower would be told, "The market has not come in yet," and perhaps further, "I do not care to buy until I get the market," or, "I have not received my limit yet, and prefer to hold off until I get the market."

These and similar expressions are often heard from initial buyers; men whose activities in the line of cotton buying lead them to exercise their wits to the best advantages possible from the view-point of their side of the question; men whose mercenary motives are, perhaps, not above that of their fellow-men, yet their inherent desire to gain a competency through cotton

transactions, has given cause for those unacquainted with the inside workings of the cotton market, to accuse spot buyers of taking undue advantage of the farmer when offering his cotton for sale.

Had the market closed lower the day previous to the one on which the farmer brought his cotton to market, the buyer would readily say, "The market was a little off yesterday, and I look for a lower market today, as yesterday's cables stated that Liverpool bought only 6,000 bales; Manchester spinners were practically out of the market, and exporters claim that they are receiving but few orders for immediate or forward delivery; futures were down 10 to 12 points." Such statements, or those of similar import, quite frequently induce growers to sell at once for fear of a further decline and further loss on their part.

Had the market closed higher the day before, the honest buyer, the buyer who executes all his cotton transactions with fairness, would be just as ready to tell the grower, the market was up the day previous, and from all information at his hands, the probabilities were, "We will see a better market today," or something similar.

Parenthetically speaking, it is not always a wise policy to attempt to forecast the market to prospective sellers, for reasons that are obvious even to a novice.

Now, let us take up Mr. Farmer again; he has his wagon on the street with its three bales of cotton; he has waited for "the market to come in," and perhaps by this time a dozen or more farmers have appeared; some with one, some with two, some with three, four,

five or probably six or eight bales of cotton on wagons, totaling fifty or sixty bales ready to be sold.

A buyer going to the wagon in the presence of the farmer or farmers—many times ten, twelve, fifteen or more farmers will stand by the buyer and watch him closely as he proceeds—cuts a slit ten to twenty inches crosswise the bale between two of the bands, taking from this opening a sample of the cotton of perhaps four to six ounces, examining it carefully for dirt, stain, trash, gin cuts or any foreign substance, and classes it mentally as to grade—after examining this sample he cuts the other side of the bale similarly, going through the same proceeding as at first.

After one buyer draws a sample, others often do the same thing from the same cut; all samples being thrown back in the wagon.

The cotton is generally weighed by public weighers, who usually get the samples, which go largely towards making the “city crop.”

It is rare that both sides of the bale show identically similar cotton, in such instances the buyer makes his offer on the side showing lowest grade, unless it is apparent beyond a doubt, that the low grade is superficial and not of sufficient importance in amount to affect the whole bale, then in such cases, the cotton is taken at its true grade on best portion.

It sometimes becomes necessary, especially, late in the season, to examine the ends of the bales to ascertain the mixed nature of the cotton that may be in the bale, by reason of rain, frost, etc.

The buyer having examined Mr. Farmer's three bales of cotton, finds by calculation, that they average middling in grade, and he having received a limit

of $10\frac{1}{16}$ for such grade, offers 9.95 all round for it perhaps another buyer will offer $9.97\frac{1}{2}$; the first buyer will, if he cares to handle it for $\frac{1}{16}$ profit, make a counter offer in competition of 10 cents; should the second buyer not raise this bid, the cotton is sold for 10 cents and paid for immediately.

As the day proceeds, should the market decline $\frac{1}{16}$ or $\frac{1}{8}$, the Waco house will at once notify all buyers for it to reduce their limits accordingly, and report the amount of cotton which they have bought on first limit up to this time.

Should the market advance during the day as much as a sixteenth or an eighth, the house immediately notifies its buyers, that they may be kept in position to offer competitive prices.

What Mr. Anderson has done at Valley Mills for himself—for the Waco firm—has been done by all buyers for this house, at the other representative points adjacent to this firm's territory.

All buyers report to the Waco office at the close of the day's business, and up to 9 a. m., before making final closing for the day.

After nightfall, frequently local buyers through the telephone system, buy more cotton from small dealers in general merchandise, who accumulate stocks of cotton on mercantile accounts, and from ginneries in different portions of their respective counties.

When all buyers make their final daily report, the Waco office knows at once the total purchases for the day in its territory, and in like manner reports by telegraph or cable the result to the parent office in New York or Liverpool.

The total purchases vary in daily transactions; amounting some days to a thousand or more bales.

As bought stocks accumulate at the different points, gathered by buyers making purchases on quoted limitations, the "take-up man" makes the rounds over the district, after previously notifying these different buyers the date he will visit and take up the cotton bought; the buyers before the arrival of the classer ("take-up man") arrange the cotton bales in rows or suitable shape to be gone over to best advantage; the buyer and classer go over the list in this way: The bales lying on their edges in rows, usually touching each other, the classer will cut the bales on the top side, cutting the bagging in a different place to the original cut, between different bands, cutting deeper and extracting a sample of fully eight ounces therefrom; samples are drawn after the cotton is weighed; as the bales are sampled and classed, the classer attaches a tag to each bale showing the firm name thereon, also the number of the bale—the bales being numbered consecutively—such tags being printed in duplicate form, a portion of the tag is torn off, this is wrapped inside the sample, corresponding identically to the number on the tag on the bale. As samples are drawn in which are folded the duplicate tag numbers, the samples are packed closely in a sack prepared for such purposes, and forwarded to the Waco office.

CONCENTRATION.

Assembling cotton at these various initial buying points, results in accumulating a quantity of cotton

of a very mixed number of grades, all bought on a basis price.

After the "take-up man" has gone through the different lists, and settled with the different buyers on the basis of the grades and weights shown, the cotton is located into the compress at Waco or some designated point for compression, before its start to final destination on through bills of lading.

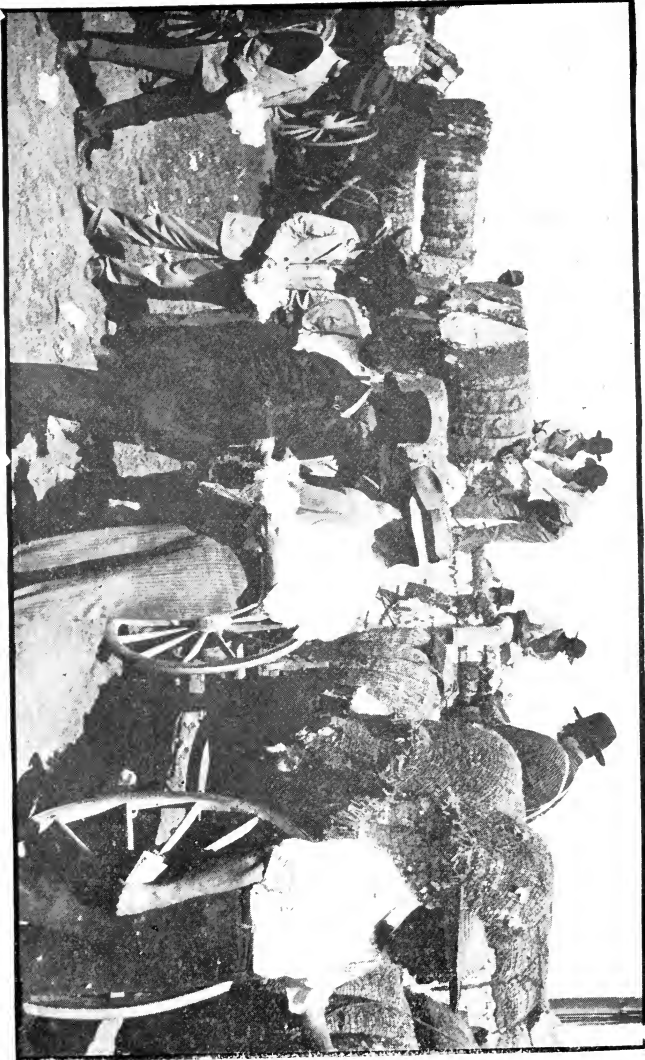
During the busy portion of the cotton season, cotton accumulates very rapidly daily at the compresses, a large percentage of which has been sold for forward delivery before arrival, principally to consumers whose requirements stipulate specific grades, and to secure these definite grades necessitates the constant presence at the compress or place of concentration, expert classers, who go through these diverse numbers of shipments of miscellaneous grades, assorting them into even running classes as are required on the orders to go out.

To keep track of these orders, it is usual to give to each a distinct number, as No. 23, 250 bales strict middling, Fall River, Mass.; No. 24, 300 bales low middling, Osaka, Japan; No. 25, 100 bales good middling, Providence, R. I.; No. 26, 600 bales middling, Barcelona, Spain, etc.

Selling cotton to spinners whose restrictions limit the classification to specific grades, give cause for the operator to demand and secure better prices for such character of cotton, and, indeed, buyers who secure their requirements exacting supplies so restrictive in nature, generally offer a premium above basic figures as an inducement to get the necessary grades.

Buying all grades of cotton from a variety of





SCENE AT AUSTIN, TEXAS

Buying cotton from the growers; note how the buyers examine the cotton in their hands after it has been taken from the bales.

sources, over a broad area of territory, assembling the same at some convenient point suitable for concentration, frequently leaves, after all classified lists have been made up, a mass of odds and ends of a nondescript cotton, the value of which may be, perhaps, thousands of dollars, to be carried for indefinite periods, with such costs as insurance, storage and interest added, before a satisfactory outlet can be had justifying its sale, this is especially so after excessive and continued rainfall, or during the termination of the cotton season.

There is no getting away from the necessity of carrying this excess of accumulation of low grade cottons, unless the demand of the trade is so imperative as to practically exhaust all offerings as fast as tendered.

Payment of the different lists prepared for shipment as stated in the preceding, becomes a matter now of prime importance to the seller, and a subject of vital consideration to the reader.

The domestic shipments to Fall River and Providence are handled as any local shipment, the documents of which are the B/L, invoice and sight draft, the proceedings through the local bank, as stated in a previous portion of this work.

Payments on sales destined for foreign shipment are made in accordance with the terms of the sale, the buyers usually stipulating the procedure required on their part, designating through what banks, the character of the documents to accompany the draft, etc., shall go.

Shipments to Barcelona, Spain, are usually paid for through exchange on London or Paris, France; those directed to Japan are generally based on English reimbursement, with drafts at 60 or 90 days on London or New York.

New York banks handling drafts covering shipments of cotton for foreign account, handle the same at the current rate of exchange prevailing on the country on which they are drawn at the time.

As the rates of exchange on foreign commercial centers vary from time to time, it is of course dependent on whether the draft is drawn at 60, 90, 120 or 180 days in determining the discount or premium, and the demand for the exchange, etc.

Foreign bills of lading usually read to shipper's order or to the order of some party who must endorse the bill of lading so that it becomes at once a negotiable draft.

The statement here represents a cotton firm centrally located at Waco, Texas, and shows the firm to be constantly in the market during the time these operations are being had.

Occurrences are not unusual for firms operating entirely independent of others, to find themselves actively engaged in the cotton trade, putting out limits to their representatives when at the time all orders have been filled, but to maintain their position with the trade necessitates constant buying.*

For example: Vancleve & Hoyt in Raleigh, N. C., September 28, 1908, completed the fulfillment of an

*On the completion of orders, buyers will sometimes keep out of the market, if it shows to be very erratic.

order of 2000 B/C; now, on the morning of the 29th, they put out limits as usual but made them to conform to current quotations prevailing as previously, not knowing whether gains or losses will occur on such purchase.

At such times, however, operators are busily engaged in efforts to place cotton to cover that bought, and to be bought.

Suppose spots to be worth in Raleigh 9.80 M/B, and Vancleve & Hoyt buy 200 bales in the open market before placing an order, and succeed in selling 500 bales at 9.90 during the day with no further advance in the market, their succeeding limits would be put out at quoted market values; should the market decline they would follow it with reduced limits, equally so succeeded by increased ones, were the market to advance.

It is noted this Raleigh firm had 200 bales on hand when the short sale of 500 bales was made, and should there be no variation of any appreciable extent for twenty-four hours, it is quite probable the order would be filled at current quotations, and a gain of 10 points or 50 cents on the bale within this time. Were the market to decline a sixteenth or an eighth, these proportional amounts would accrue as an additional gain to the 10 points, that is, the sale was made at 10 points above quotations, and if followed by a decline of one-sixteenth ($6\frac{1}{4}$ points) then a gain would be had of $10 + 6\frac{1}{4} = 16\frac{1}{4}$ points, equalling $81\frac{1}{4}$ cents on each 500 pound bale.

The character of the business handled by the salaried buyers is the same in substance as a representative one buying on limits, except no classer (take-up

man) is necessary to visit their place of buying, and take up any cotton bought by them, as such men are well versed in classification themselves; they merely keeping record of their transactions, and sending in samples to the office, of all cotton bought. They may be moved from place to place during the season as circumstances may demand.

Quotations on which to base their operations are given them often during the day, should the market show variations sufficient in amount to justify changing.

COTTON GUARANTEES.

Cotton sold to be delivered on contracts in the future, bought on the New Orleans or New York Cotton Exchanges, require no guarantee as to weights and grades, as the rules prescribed by them for such contracts, determine the manner in which deliveries shall be made.

Cotton bought at one point to be delivered at some other, where the buyer does not take up the cotton at place of purchase, must be accompanied by a guarantee protecting the quality and weight or class mark,* unless the buyer accepts the seller's weights and grades.

Cotton sold for foreign trade is invoiced at full or gross weights, and the same weights at landing on the other side must be guaranteed within one per cent.

*Many dealers who operate on a large scale use "class marks," and sell cotton on them instead of grades; as WACO for good middling; TOWN strict middling; DOAN, middling, etc.; and buyers familiar with the usages of such customers, buy on such class marks from them, instead of grade as a quality.

of those shown in the invoice, when destined for German ports. Such requirements for other European ports are similar or nearly so.

Where shipments do not come within one whole grade of the quality designated as a guaranteed average, a small penalty is attached, to be paid the buyer, in addition to the loss on the grade.

Sec. 43. All cotton shall be weighed and invoiced at full weights.

Allowances in weight for damp or damage shall be specially deducted in the invoice.

Bales of North American Cotton weighing less than 135 (298 lbs.) or more than 300 (662 lbs.) kilos gross may not be tendered.

Sec. 44. The allowance for Tare on American cotton shall be four per cent on the gross weight after deducting the weight of iron bands and ropes. If the tare exceeds four per cent on the average of the whole lot, the excess shall be paid by the seller.

* * * * *

The actual tare shall be ascertained by stripping ten per cent of the original bales, but not less than five bales, and weighing the tares, and the average weight of the tares of the bales stripped shall be taken as the tare per bale for the whole lot.

In ascertaining actual tare, buyer and seller shall each select one-half the bales to be tared.*

From the preceding it is seen a 4% tare is exacted after removal of the "bands and ropes," the which if added as an excess tare would approximate 6%, which is about the usual deduction made in spot transactions for foreign account.

CENTRAL BUYING POINTS.

In the preceding section descriptive of "spot cotton buying," the territory given is located at Waco, Texas, as a central buying point.

*From Rules of the Bremen Cotton Exchange.

In Texas are several such points, all of which have a number of buyers, especially during the fall season when the trade is very active, and from such places as central points may be mentioned Galveston, Houston, San Antonio, Ft. Worth, Dallas and Texarkana, from which the trade is handled as described for that of Waco territory.

Similarly, the system prevails in Little Rock, Memphis, Natchez, New Orleans, Mobile, Montgomery, Atlanta, Savannah, Augusta, and Charleston.

To read clearly the description briefly stated for buying spot cotton, described for Waco, will succinctly give the American system of handling spot cotton in the entire South, in connection with portions of other parts of this work.

SHORT SELLING SPOT COTTON.

It will be remembered in the immediate preceding, the statement of how spot buyers in making purchases from the growers at primary points, bought exclusively on "limits" and by salaried employees.

Now, those buying exclusively on limits, that is, at prices for purchases given them by some one else, and any reward for such purchases to buyers for their time, their skill and labor, must be had from buying at a less figure than stated in the "limit." In such purchase, the buyer knows before he buys just what he is to get for the cotton bought, and when bought on a narrow margin, his classification must be correct—that is, just as the classer would class it who takes it up—or he will meet with a loss in this direction.

In the South are large numbers of buyers who receive limits, and deliver cotton on them, but generally speaking, they "take the market," by arranging with some telephone or telegraph company to supply them regularly through each business day through the season, with the quotations from the Cotton Exchanges, from which they calculate a basis price and make in this way their own limits, or middling cotton price, governed by dealers at the large cotton centers to advise them as to the amount of differences "on" or "off" for the grades above or below that grade, little attention being had for such differences as may have been designated by the exchanges.

Were the differences always measured by the Revision Committee of the Cotton Exchanges, followed implicitly by spot dealers, it would be quite easy to determine with accuracy the value of all the relative grades, but more frequently the reverse obtains, as firms handling spot cotton extensively, do not always agree with the Cotton Exchanges as to the value of major or minor grades, which fact within itself affects the prices more or less to be offered the grower, and to him it may seem puzzling to understand why one buyer will pay more for a certain class of cotton than some other.

Our large metropolitan-daily and weekly newspapers devote ample space to the market quotations; those of the South exhibiting, especially, a character of reports that are replete and significant on cotton, not only quoting the prices of spots and futures in the New York and New Orleans markets, but briefly giving the values of cotton in some of the foreign cotton centers, also.

To better understand the statement, let us quote the New Orleans cotton market for spots, say May 28, 1909.

Ordinary	8 $\frac{1}{8}$
Good ordinary	9 $\frac{9}{16}$
Low middling	10 $\frac{7}{16}$
Middling	11
Good middling	11 $\frac{3}{8}$
Middling fair	11 $\frac{3}{4}$

Note that L. M. is $\frac{9}{16}$ and G. O. 1 $\frac{7}{16}$ off from M., G. M. $\frac{3}{8}$, and M. F. $\frac{3}{4}$ "on." Now, at this time spot buyers would make for G. O. about 250 and L. M. 125 points off from M., while for the premiums on G. M. and M. F. they would probably accept them as given in the quotations.

Should a farmer offer a L. M. bale of cotton at some interior place having a freight rate to New Orleans of 50 cents a hundred, this seeing from his paper that M. cotton is given at 11 cents valuation in New Orleans would assume it to be 10 $\frac{1}{2}$ at his market and for L. M. would command a figure $\frac{9}{16}$ less, or in other words 9 $\frac{1}{16}$, but when told by the buyer that such cotton is 125 points off from M. he does not understand why such a divergence from the quoted market, and instead of 9 $\frac{1}{16}$, he can get only 9 $\frac{1}{4}$.

The cause of this difference is this: Cotton delivered on contracts in New Orleans would be accepted at the differences stated in the official quotations, but as hundreds of thousands of bales of cotton are handled annually by spot merchants who buy and sell independently of the Cotton Exchanges, the consumed

to a large extent is the factor determining the value of the differences, and those buying from the growers, who in turn sell to mill representatives, are governed by the differences given them by such representatives, hence this disparity between the official cotton quotations and what the spot buyer pays at primary points for the relative grades.

No doubt unscrupulous buyers many times take advantage of these discrepancies in quoted and, paid values, and through such sources the farmer finds himself mulct by virtue of his want of knowledge of the true conditions, that surround the marketing of his own productions.

Now, spot buyers buying for various representatives or for mills using a variety of cotton, have quite an advantage over a buyer who buys for only one firm, as it happens that one firm from different causes may find itself at times without orders, and at such times it is not in the market and a buyer for such a firm does not care to buy at his own risk, but where a buyer has several correspondents it is hardly possible to catch him not in the market, and through these many outlets, some of whom have wider differences than others, he can offer better figures for certain grades required of this class of customers than those who have narrow representation.

Hundreds of thousands of bales are handled annually by a large number of buyers who take their cotton direct from the farmers; such buyers as stated, receive the daily Exchange quotations, in connection with frequent communications with spot dealers, calculate their own home price, and from all information from all sources, added to their own judgment

and business sagacity, direct their efforts in lines of speculation that seem to offer best returns.

Spot buyers in the interior, whether large or small, who have no direct nor indirect connection with any of the Cotton Exchanges; who like the farmers unorganized, can not manipulate the cotton markets as the members of the great Exchanges can do, naturally take the sensible side of any proposition offering, when exercising their faculties as to the probable results that might accrue upon any action of their own.

Evidences existing indicating a large yield, light demand, and a rapid movement to market, would be sufficient to induce an inference by any reasonable person that a decline in the market would logically occur, and until something should arise to more than counterbalance these depressing influences, the probabilities of an advance under such pressure would not likely take place. This is reasoning from the standpoint of light demand, and assuming *demand* or want of it to be a governing factor, any intelligent buyer would not hesitate to "sell the market short" under such considerations and conditions and reserve the right to feel his actions were guided by business judgment.

Such evidence existing as to indicate a decline, would be broadcast, and while its inception might be endemic, the contagion spreads until the entire buying fraternity, with scattered exceptions here and there, have "sold short," more especially if the price for the sale be inviting; under this influence and pressure the market sags; each and every buyer feels the market should decline; he talks as if no life were in the market; the papers are full of such statements as "heavy

receipts," "stagnant trade," "glutted market," "labor troubles," "financial disturbances," etc., the very fact of such agitation conduces to declines—and the market does decline. The sentiment to "go short," is not only state-wide, but covers the entire South, even spreading to foreign commercial centers, and when so universal, the power of the great Cotton Exchanges can not with all its force revert the tide of sales overwhelming the market and irresistably forcing it down.

The statement here drawn, is so clearly set forth that the line of demarcation between a possibility and an actuality is unmistakable—the actual conditions set forth are self-evident, namely, the crop is large, demand is light, receipts heavy, all of which induce *short selling*.

This condition prevailed, notably in the year 1894, and the years 1897-8, to which the author bears witness as he was actively engaged in cotton buying in these years, more particularly the latter two, as being the first in which he learned the value (for the buyer) of short sales; the whole South "went short" and every effort put forth by the Exchanges to advance the market, was met with such a flood of offerings as to effectually prevent any advance; spot buyers were just as anxious to see reactionary advances as any one, but only to get a better base on which to sell, and sell they did. Thousands did not wait for any advance; as fast as their forward sales were completed by the delivery of cotton on them, others of like nature followed repeatedly for two and three months in succession during gathering time.

When the buying element at all the local points in

the South, operating intuitively as one interest, and that too, in line with the large firms, the direct effect upon the market is doubly forceful, backed with large crops and heavy receipts, *short selling* follows to the detriment of the grower, and a loss to the cotton belt of millions of dollars.

At such periods when extensive short sales are being consummated everywhere, the spot buyers are not the exclusive factors contributing to declines, but, the consumers who spin and weave the raw material into finished products who are ever alert for such events to transpire, adroitly keep out of the market or buy only on concessions, adding a further weight to the market and a bar to any advance.

The basis for this action is the purported large output expected from the farmers' fields; they who are ever anxious to realize adequate returns on their labor and should get good results, are the originators of a force within themselves, the which being augmentative to that of the short seller, non-activity of the consumer and exchange manipulator, constitutes a third factor operating against themselves as to any advance in the market.

Were it possible through association that the cotton growers could so unify their actions as to so effectively gauge the cotton yield annually to an amount exactly adequate to the demand, a consummation of their hopes could be materially realized, and prices consonant to their every wish would be a felicitous result; such co-operation would practically destroy any source for short selling and permanently eliminate such factors from the market.

The very fact of the farmer making a large or small

crop, is a point of consideration equally interesting to all in any way connected with the cotton trade; to him all interests look for information on this subject that will give them a probable guide to any speculative intentions.

When it is seen that the acreage has been materially increased, the seasons appropriate, it is logically conceded that the yield will be good if not large, and trading in the staple seeks the short side of the market; the farmer being in such instances the primary cause for manipulative action on the short side, and a bar to his own interests. Inversely, when the acreage has been so reduced to such a percentage as to affect the probable output to an appreciable extent, the inclinations of the most arrogant bear to invade the market as a short seller are largely held in abeyance for fear of an adverse element that might be injected into the market and prevent any decline, produce stability, or create an advance, all of which would reflect against him in attempting to throw the market down by short selling.

Operators dealing extensively in the cotton trade, and who will, perhaps, at times sell the market short several thousand bales, in order to secure their requirements, frequently offer encouragement to their representatives at interior points in contributory territory, who in turn sell short, and in this way the large dealer secures his commitments secondarily without seeking protection through a contract from some of the Cotton Exchanges.

When farmers are offering their cotton freely to local buyers; when the markets are being flooded with heavy receipts faster than the trade can absorb

them, it is quite an easy matter to make short sales with almost an assured confidence that they can be easily satisfied, with but little risk to those operating; and here again it might be emphasized, the grower accelerates the decline, contributing by his actions effective influences that induce lower prices.

Now, while information relative to the acreage might be satisfactory to the trade, climatic influences affect more or less the finality of the cotton yield, the sentiment respecting the ultimate out-put, is not the same with all dealers, and upon this sentiment diverse ideas emanate; some believing the market will go up, some think it will go down, and to attempt short sales at such moments invite speculation of doubtful results.

Those who would attempt to short sell under such information, often find the market advances against them, when their efforts to buy further, stimulate demand, and indirectly, the short seller gets "caught" in bulling the market against himself.

ARGUMENTS FAVORING SHORT SELLING CRITICISED.

It is argued by some leading members of the Cotton Exchanges that short selling is a stimulant to trade and really conduces to better prices, on the ground that those who sell short must buy again to fill the orders, and this secondary purchasing being among competitors, adds such a stimulus to the trade as to cause advances and good prices to the grower.

If such reasoning were truly logical, the conclusions would be drawn that those selling short would expect to pay more for their purchases than the prices

obtained in the sale, and a consequent loss in the transaction, if so, one would reasonably conclude that short selling induced losses to the operators.

No conservative dealer would ever sell short did he not expect to buy at a less figure than called for in the sale, for to a future depressed market he looks for his gains, and not elsewhere, and the lower the market declines before he buys, the greater the margin to accrue to his credit.

It is not usual to find the market in such condition as that just described, and when not so clearly set out as to a definite yield, to attempt to bull or bear the market upon an uncertainty necessarily involves more or less risk, and any operator speculating at such times must needs be subjected to a hazard not unlike gambling.

Indeed, the very fact of the existence of this uncertainty is a contributing cause for diverse sentiment, and it is argued by Exchange members that the prices for our cotton are founded on *sentiment*; a portion of the trade believing the market sufficiently high to justify maintaining at such a point, on which short sales may be made, while the other portion think causes exist sufficient to call for an advance, and these diverse ideas contribute to a stable market—in other words, diverse sentiment create bulls and bears, the two opposing forces of which when about evenly divided, give stability—but should the bears preponderate as to numbers or influence, the market can be driven to lower levels; should the bulls be in the ascendency the market is taken in their hands and prices made to advance.

This argument is directly applicable to members of

the Cotton Exchanges, but should apply equally well to spot dealers in the South, who, while not so aligned in unified organization, their actions based on universal ideas as to the large or short crop, govern them in their operations; if the spot buyers believe conditions exist giving sufficient evidence of an advance in the market, they will buy cotton with avidity and hold for higher quotations, which operations when South-wide stimulate prices, and give as good results as if the market were manipulated by any other agency.

To "short the market" in the absence of any definite information, is equivalent to guessing at results; if the guesser guesses right, he wins, if not, he loses, and the fact of such operations by dealers create in the market two character of buyers; one who can buy all cotton offered if desired, and the other who is virtually out of the market.

Let it be stated that T. L. Williams at Union City, Ga., sells 500 bales short at 10 cents, and Tom Jones does not "short the market"; suppose the market declines to 9.80 before any reaction; it is apparent that Williams has the advantage of the Union City market, because he has cotton *sold* at 10 cents; assuming a grower offers 5 B/C on the market; Jones offers 9.75, for 9.80 is all he can get for it at the time, now, as Williams can get 10 cents, he can buy every bale of cotton offered up to 500 on such a market and Jones can not compete with him; should Jones wish to make Williams "pay all its worth," he could bid 9.80 and force Williams to pay $9.82\frac{1}{2}$ or 9.85, either of which figure would be at a loss to Jones and a gain to Williams.

This in practice, frequently occurs in all Southern markets during the season, and makes clear to the farmer not fully conversant with such facts why some buyers pay more for cotton than others.

Buyers in some towns will all sell short, while those in adjacent ones fail to do so, then if the market declines, those having "shorted" the market are in the ascendency, and this town by reason of its action has placed itself in position to offer more than its competitors, and such a town is accredited with being a better cotton market than others in the same territory, and vice versa.

Were the market to advance against these "short sellers," they would be "on the wrong side of the market," and their competitors the gainers in the end. This does not argue that the short seller would not buy cotton, not by any means, in fact he would be the more active buyer of the two, as every point advance against him is just so much loss, and to secure his requirements as early as possible and minimize this loss stimulates him to offer "above the market" to fill his contract, and, perhaps, again have the credit of being the best buyer—such short sales are always kept from the public; the grower left to form his own assumptions.

Now, again, local buyers operating in a market the tendency of which is to advance; frequently subject themselves to a keen competition; buying at times becoming so active that the market is practically lost sight of, and prices purely arbitrary offered the growers. This, however, is a rare exception and not the rule for such a character of business prosecuted upon only *probable* advances are just as likely to result in

a loss as a gain, for which reasons the buying fraternity offers little encouragement for a continuation of the practice.

This is arguing from the stand-point of the present cotton system of marketing cotton, under the guidance or auspices of the Cotton Exchanges.

The American Cotton System as set forth in the preceding chapters is one founded on practical experience of something like half a century, and from its inception to the present day it has been and still is in an everchanging state; each succeeding year witnessing some change of more or less importance in the system principally shown in amendment of rules pertaining to the Cotton Exchanges, delivering on spinner orders especially for foreign delivery.

Until very recently cotton billed for foreign ports, could be sold with guarantee following shipments covering quality and weights, but owing to so much friction having resulted in securing reclamations on this side, the European trade has demanded and still holds to the practice of requiring operators here to have representatives there backed with financial resources and authority to adjust claims and depend no more on attempted adjustments in America.

COTTON WRAPPINGS.

Evidently the primary motive for wrapping the cotton of the South in jute material was from the fact of its first use being regarded as an economical idea; the jute being recognized as a cheaper wrapping than the substance to be protected, and from the days of its inception, its popularity has given it dominance

over all other materials, despite the fact of its offering poor protection to the cotton wrapped.

The fact of its being woven so loosely, the fibers of the cotton wrapped easily protrude, offering inviting sources for fire, and a demand for higher rates of fire insurance.

This material offers but little resistance to dirt, soot, or smoke, and absolutely none to moisture.

Some brands of jute bagging have been treated to an application of some substance to render it resistant to fire, but were it made absolutely so it does not by this reason give perfect protection to the cotton enclosed in it, because of the fact of its loose construction.

The application of jute bagging to cotton is directed more especially to its use for covering square bales, such being large and heavy, can not be well handled without the use of steel hooks, which when used often tear the bagging badly.

It should be remembered as stated elsewhere in this work, how buyers cut the bagging on cotton when first purchased from the growers' hands; how subsequent buyers do the same thing, but cut in a different place and these cuts, often four and five, being made at a different place each time, taken in connection with the mutilation given with the hooks, virtually destroys the utility of the bagging and leaves it in a very ragged condition when arriving at the compress or destination.

Bales so mutilated are patched at the compress, and for each and every one put on, additional charges are entered against the bale.

From the first purchase of cotton to its final destina-

tion, it many times passes through the hands of from three to five different ones, each time weighed, sampled and insured, each time sampled it loses the weight of the sample and its value; each time weighed a charge is made; each time insured an additional expense.

It is quite evident then from the nature of such a system of handling cotton, it is necessarily a very expensive one, and all such charges being taxed up against the cotton are calculated as charges to be deducted when the purchase price is made for the grower, and on him these charges fall.

The weight of loosely woven jute bagging surrounding a bale of cotton is twelve to fourteen pounds, and the six ties, ten pounds, making about twenty-two to twenty-four pounds on each square bale on which freight must be paid in its transportation, and for which weight no mill pays, for such tare is figured off when prices are made for cotton bought.

The fact of an arbitrary tare of 6 per cent being deducted from the weight of cotton sold for foreign account, proves quite expensive to the farmer, because such a percentage on a 500-pound bale proves excessive.

Estimating the weight of bagging and ties to be 24 pounds to the bale, and say a bale weighs 500 pounds, 6 per cent of which would equal 30 pounds, thus taking from such a bale an excess of 6 pounds, falls as a loss to the producer, and the larger the bale the greater the loss, relatively, to him.

Now, jute bagging having no practical value after being used is sold as "old junk" for about one-half cent a pound, while the steel ties are dumped to the

iron trade as old metal for a nominal sum of one quarter cent a pound, usually, returning but little credit for the original costly wrapping.

All cotton to go out on long railway hauls, or for ocean steamer is compressed before shipment, and when so prepared is patched to cover the cuts in the bagging.

Compressing cotton reduces the compressed bales to about one-third their original size, resulting in securing two-thirds more space in transportation equipment.

Cotton treated to patches at the compress, and prepared for its long haul, one would think it should arrive at destination in good, or at least, fair condition, but for the facts, let us look into some of the reports of our consuls at the foreign commercial and manufacturing centers.

CONSULAR REPORTS.

Mr. J. Edward Nettles, consul to Austria-Hungary, in his report for May, 1895, said in substance: American cotton received at Trieste, suffered in comparison with foreign cotton, both on account of the style or manner of covering, and the extent of compressing.

The covering was torn, the hoops off and the cotton liable to loss from mud, dust, theft and handling. The marks are well-nigh invisible on the covering, and great trouble and confusion arises therefrom. The bales vary in size, which adds to the expense, in preventing compact and close storage. The loss in weight is about one per cent in excess of other cotton, and that with increased freight and other expenses, gives about three per cent advantage to foreign cotton.

Consul C. W. Chancellor of Havre, and Consul C. M. Thomas of Marseilles, made similar statements: "The merchants of Marseilles gave it as their opinion that the ideal bale should be about 350 to 400 pounds in weight."

Consul Hugo M. Starkloff, stated American cotton suffered excessive tare in the Bremen market. Substantially he said: The wrapping of a cotton bale has frequently been weighed and found to weigh up to 57 pounds without the bands, notwithstanding the amount of covering used, it was of the poorest quality, and consisted many times of old linen, old coffee bags, or materials of similar construction which were easily torn on first handling.

Consul J. C. Managhan at Chemnitz, stated the Austrian Spinners' Union, the Bremen Cotton Exchange, the Spinners of Saxony, Southern Germany and Bavaria had held meetings and were unanimously of the opinion that American cotton growers should be asked to use a heavy cotton covering as a substitute for jute. It was stated a cotton covering could be used for many purposes after being taken from the bale, while the present covering of jute was of no practical value after serving its purpose. It was proposed to order from those using cotton covering.

The author is unacquainted with any efforts on the part of such organizations to demand from American growers or dealers cotton so wrapped.

Consul James E. Neal, in Liverpool, condemned very severely the principle of screwing bales into the holds of vessels, and cutting off the ends to make them fit snugly. In such a manner a great deal of cotton is lost, as when the ships are being unloaded this falls

about the holds and quays, making it unfit to be placed back in the bales, and must necessarily be sold at greatly reduced price. From ten vessels unloaded, he stated, from the reports of the inspectors on the rough and broken cargoes, in the ten vessels, it was found that foreign consignees in Liverpool had to receive all the way from five to ten bales to make up for the loss on the broken ones. Such state of things results in heavy claims for loss of weight, which falls on the American shipper.

Mr. Neal further stated that most American cotton bales are landed in a very ragged condition, with the cotton much exposed, and either because of the poor material of the iron bands, and especially the ties (the author thinks he refers to the buckles on the ties), or because of the extremely rough treatment on the railways or steamships, great numbers of bales are landed with several bands missing. In consequence of the bands being removed, the bales have expanded and burst the covering, the cotton in the loose part of the bale merely holding together by its own tenacity. Sometimes the bales are completely broken up and landed in bulk.

Cotton landed at the Spanish ports, according to Consul Herbert W. Bowen, stationed at Barcelona, shows to be in about such condition as that landed at other foreign ports. "It is not an uncommon thing," he said, "to see a bale broken in two, or others with one or two hoops off and the end of the bale looks like a cauliflower."

"Pilfering of our cotton is almost reduced to a trade—women and boys hovering around a bale like flies around honey. In short, all except the brokers

agree that the United States cotton does not arrive in proper condition, and they do not hesitate to assert they would buy more American cotton than they do, if it were deliverable as it should be."

While these extracts are taken from old consular reports, evidences of more recent nature show that our cotton, to a large per centage, is still landed in a very dilapidated condition.

The charge is made by foreign consignees that the reason for so much cotton being delivered in bad form is because mainly of the character of the wrapping used and the form of the package.

The price that should be paid the grower for his cotton, should be that received at the mills, less the expense of getting it there, and the fewer the interventions the less intermediate charges, and how to eliminate all unnecessary intervention is the problem to be solved.

It is not the purpose of this volume to attempt to formulate a new system or plan for marketing cotton, but to give the prevailing system as it exists today.

The author believes the present system can not be improved by any one, or by any corporate body, unless this body is fully conversant with all the details connected with it, and to acquaint the public with such information and details is the object designed by this work.

Now, when the allegation is made by foreign cotton interests that the use of jute bagging is the cause for so much cotton being delivered in bad condition, the inference is that some other material for a covering and a different form of package should be used.

It is evident, if a lighter material is used for wrapping and the use of the ties abandoned, the wrapping will be lighter in weight and the cause for excessive tare removed.

To overcome these obstacles, a few years since, efforts were made to change the form of the bale from square to round, which was done, and with no other covering than the heavy cotton cloth enveloping it.

To make this form of bale capitalists invested heavily in such an enterprise, and exerted themselves to introduce a round bale to the trade, but owing to the fact of popular prejudice being aroused against its general use, the undertaking was abandoned to a large extent, but private interests are again making efforts to re-introduce it with possibly some improvements over the original form introduced.

If this form of bale will admit of a covering the weight of which will be reduced one-half or twelve pounds, this amount of tare should accrue to the credit of the grower, who is now actively engaged in trying to stimulate the idea to have all forms of cotton wrapped in cotton material, whether the bale be round or square.

Such ideas should be encouraged.

CHAPTER V.

ARITHMETIC OF COTTON.

No deviation from the characteristic signs ordinarily used in arithmetic will be made in this work.

The usual signs expressive of the fundamental principles of addition, subtraction, multiplication and division will be used.

For addition the plus sign $+$.

For subtraction the minus sign $-$.

For multiplication the sign \times .

For division the sign \div .

For equal or equally, the sign of parallel bars $=$.

The sign plus ($+$) when placed between two or more numbers show that they are to be added.

The minus sign ($-$) shows that the number on the right is to be taken from the number on the left.

The ex (\times) or multiplication sign when placed between two or more numbers indicates they are all to be multiplied together, and are read, multiplied by, as 6×3 , is read, six multiplied by three, or six times three, and $5 \times 3 \times 4$, is read, *five multiplied by three multiplied by four*.

Only one sign of division is expressed herein, the bar with a dot above and below (\div) and shows that the number on the left is to be *divided by* the number on the right; as $12 \div 3$, is read, *twelve divided by three*.

The sign of equality ($=$) is read *equal, equals or equal to*. $5 \times 3 = 15$, is read, *five multiplied by three equals fifteen, or is equal to fifteen*.

The New York and New Orleans Cotton Exchanges having established the rule, that *all* cotton calculations for all cotton dealt in by them shall be made in cents and decimal fractions of a cent, and that no transaction involving the use of a decimal fraction less than one-hundredth ($\frac{1}{100}$) of a cent for each pound of cotton should be allowed, and the introduction of this particular form of decimal fraction has given rise to the use of the same designated as a "Point."

The "point," therefore, will have a conspicuous place in this work.

A *point* being one one-hundredth ($\frac{1}{100}$) of a cent, and a cent, one one-hundredth ($\frac{1}{100}$) of a dollar, then one "*point*" is one ten-thousandth ($\frac{1}{10000}$) of a dollar, which expressed decimally is, .0001 of a dollar and calls for use of the decimal fraction.

The "point" requiring the use of the decimal fraction to the fourth place, to understand its full meaning, and to elucidate it, will be necessary to examine the decimal *fraction* in its bearing on numbers.

DECIMAL FRACTIONS.

A decimal fraction is one whose denominator is 10 or some multiple of 10, but its numerator may be any number. It decreases in value from left to right on a $\frac{1}{10}$ scale, or increases from right to left in a 10-fold way.

The denominator of a decimal is not expressed as one in a common fraction.

The period, decimal point (.) and naughts or ciphers are essential to the construction of decimals.

Decimal fractions can be expressed as common frac-

tions and common fractions as decimals when the denominator of a common fraction is 10 or some multiple of it.

To express the fraction $\frac{1}{10}$ as a decimal the figure 1 is used with a dot in front of it, thus, .1; if it be made to read $\frac{1}{100}$, it is made this way, .01.

A naught on the right side of a decimal figure adds no value to it, yet, for convenience, in adding, subtracting or dividing decimals it is often used.

As $\frac{1}{100}$ is $\frac{1}{10}$ of $\frac{1}{10}$, and a naught on the right of the decimal adds nothing to its value, the naught is placed to the left of the 1 with the period (decimal point) prefixed, indicating $\frac{1}{10}$ less.

Common fractions: $\frac{1}{10}$, $\frac{1}{100}$, $\frac{1}{1000}$, $\frac{1}{10000}$, $\frac{1}{100000}$, $\frac{1}{1000000}$.

Decimals: .1, .01, .001, .0001, .00001, .000001.

These numbers are one-tenth, one one-hundredth, one one-thousandth, one ten-thousandth, one one-hundred thousandth and one one-millionth, shown both as common fractions and decimals.

Note that the number of figures in the decimals is one less than the number in the denominator of the common fraction.

All decimals in the order of tenths have only one figure; hundredths, two figures; thousandths, three figures; ten-thousandths, four figures; one hundred-thousandths, five figures, and millionths, six figures, with the decimal point in front of them—prefixed at the left of the numbers.

The relative value of whole numbers and decimals may be compared in this way:

1000=one thousand.

100=one hundred.

10=ten.

1=one.

.1=one-tenth.

.01=one one-hundredth.

.001=one one-thousandth.

From the 1 up, the numbers increase ten times each multiplication; from the 1 down, they decrease one-tenth each multiplication, that is, 10 is ten times one; one hundred is 10 times ten, etc., while one-tenth is $\frac{1}{10}$ of 1; one-hundredth is $\frac{1}{100}$ of 1, etc.

DECIMAL COMPARISONS.

Tenths.	Hundredths.	Thousandths.
.1	.01	.001
.2	.02	.002
.3	.03	.003
.4	.04	.004
.5	.05	.005
.6	.06	.006
.7	.07	.007
.8	.08	.008
.9	.09	.009

If written thus: 10 and call it 10-tenths, is equal to the fraction $\frac{10}{10}$; then it is a whole number and becomes 1.

If the number 10 is used to express 10-tenths it can not be expressed decimally.

When desired to show its value in a decimal form, it is written 1.0—one and no tenths.

Whole numbers (integrals) used in connection with decimals, are separated from each other by the dot, and called *mixed decimals*.

1.1 =one and one-tenth.

5.8 =five and eight-tenths.

9.2 =nine and two-tenths.

6.03 =six and three-one-hundredths.

22.5 =twenty-two and five-tenths.

100.01 =one hundred and one one-hundredth.

3.001=three and one one-thousandths.

525.227=five hundred twenty-five and two hundred twenty-seven thousandths.

DECIMAL ADDITION.

Adding decimals, tenths must be over tenths, hundredths over hundredths, thousandths over thousandths, etc.

Add these numbers:

2.7, 86.5, 27.03, 16.225, 4.886, 215.16.

$$\begin{array}{r}
 2.7 \\
 86.5 \\
 27.03 \\
 16.225 \\
 4.886 \\
 215.16 \\
 \hline
 \end{array}$$

352.501

The sum is read, three hundred fifty-two and five hundred and one thousandths.

Add 356.11, 106.106, 2.5262, 527.8008, 15.00012.

$$\begin{array}{r}
 356.11 \\
 106.106 \\
 2.5262 \\
 527.8008 \\
 15.00012 \\
 \hline
 \end{array}$$

1,007.54312

This sum is one thousand and seven, and fifty-four thousand three hundred and twelve hundred thousandths.

Add twenty-two and six-tenths, four and nine-thousandths, three hundred six and seventeen ten-thousandths, two thousand and two-tenths, three hundred twenty-nine and forty-two one-hundredths.

$$\begin{array}{r}
 22.6 \\
 4.009 \\
 306.017 \\
 2,000.2 \\
 329.42 \\
 \hline
 2,662.246
 \end{array}$$

The answer is two thousand six hundred sixty-two and two hundred forty-six thousandths.

Cotton calculations requiring the use of decimals almost constantly, the use of cents, mills and parts of them are necessarily involved.

The use of cents as parts of a dollar is expressed decimally with two figures—decimals.

TABLE 1.

1 cent	= .01	($\frac{1}{100}$)	of a dollar.
2 cents	= .02	($\frac{2}{100}$)	of a dollar.
3 cents	= .03	($\frac{3}{100}$)	of a dollar.
4 cents	= .04	($\frac{4}{100}$)	of a dollar.
5 cents	= .05	($\frac{5}{100}$)	of a dollar.
6 cents	= .06	($\frac{6}{100}$)	of a dollar.
7 cents	= .07	($\frac{7}{100}$)	of a dollar.
8 cents	= .08	($\frac{8}{100}$)	of a dollar.
9 cents	= .09	($\frac{9}{100}$)	of a dollar.
10 cents	= .10	($\frac{10}{100}$)	of a dollar.

Mills being $\frac{1}{10}$ of cents, cents being $\frac{1}{100}$ of dollars, then mills equal $\frac{1}{10}$ of $\frac{1}{100}$ of dollars, equal $\frac{1}{1000}$ (one thousandth) of dollars and are expressed with three decimals.

TABLE 2.

1 mill	=	.001	($\frac{1}{1000}$)	of a dollar.
2 mills	=	.002	($\frac{2}{1000}$)	of a dollar.
3 mills	=	.003	($\frac{3}{1000}$)	of a dollar.
4 mills	=	.004	($\frac{4}{1000}$)	of a dollar.
5 mills	=	.005	($\frac{5}{1000}$)	of a dollar = $\frac{1}{2}$ cent.
6 mills	=	.006	($\frac{6}{1000}$)	of a dollar.
7 mills	=	.007	($\frac{7}{1000}$)	of a dollar.
8 mills	=	.008	($\frac{8}{1000}$)	of a dollar.
9 mills	=	.009	($\frac{9}{1000}$)	of a dollar.
10 mills	=	.010	($\frac{10}{1000}$)	of a dollar = 1 cent.
100 mills	=	.100	($\frac{100}{1000}$)	of a dollar = 10cents.

Add thirty dollars and nine cents, twenty dollars and two cents, five dollars and ten cents, eighty dollars and twenty cents, one dollar and one cent, one dollar and five cents, six dollars and three cents, sixteen dollars and sixteen cents.

The same in figures:

\$30.09
20.02
5.10
80.20
1.01
1.05
6.03
16.16
<hr/>
\$159.66

The total is one hundred fifty-nine dollars and sixty-six one-hundredths of a dollar, decimally.

This addition shows dollars and cents—whole numbers and fractions, constituting mixed numbers.

To add mixed numbers or decimals, add as in whole numbers, care being taken to place the dots directly over each other, tens over tens, hundreds over hundreds, etc., filling blank spaces with naughts if desired, and place the dot in the result directly under the dots above.

Add:

$$\begin{array}{r}
 \$ \quad 27.16 \\
 \quad \quad 9.05 \\
 \quad 160.003 \\
 \quad 225.017 \\
 \quad \quad 9.22 \\
 \quad 4,728.001 \\
 \hline
 \$5,158.451
 \end{array}$$

The same with naughts filled in vacant spaces:

$$\begin{array}{r}
 \$ \quad 27.160 \\
 \quad \quad 9.050 \\
 \quad 160.003 \\
 \quad 225.017 \\
 \quad \quad 9.220 \\
 \quad 4,728.001 \\
 \hline
 \$5,158.451
 \end{array}$$

The sum may be expressed as \$5,158.45 $\frac{1}{10}$ —five thousand one hundred and fifty-eight dollars and forty-five and one-tenth cents—the 1 coming in mills place, which is $\frac{1}{10}$ of a cent.

DECIMAL SUBTRACTION.

To subtract decimals, the same rule must be observed as for addition; that is, tenths under tenths, hundredths under hundredths, etc., keeping the lines even by filling in with naughts. Subtract as in simple subtraction.

Take twenty dollars and nine cents from thirty-two dollars and ten cents.

$$\begin{array}{r} \$32.10 \\ 20.09 \\ \hline \end{array}$$

\$12.01

The 10 cents equal $\frac{1}{10}$ of a dollar and as a decimal is expressed as .1, but to make the subtraction easy the naught is added to the right.

TABLE 3.

\$.05	(5 cents)	$=\frac{1}{20}$ of a dollar.
.10	(10 cents)	$=\frac{1}{10}$ of a dollar.
.125	(12½ cents)	$=\frac{1}{8}$ of a dollar.
.20	(20 cents)	$=\frac{1}{5}$ of a dollar.
.25	(25 cents)	$=\frac{1}{4}$ of a dollar.
.30	(30 cents)	$=\frac{3}{10}$ of a dollar.
.375	(37½ cents)	$=\frac{3}{8}$ of a dollar.
.40	(40 cents)	$=\frac{2}{5}$ of a dollar.
.50	(50 cents)	$=\frac{1}{2}$ of a dollar.
.60	(60 cents)	$=\frac{3}{5}$ of a dollar.
.625	(62½ cents)	$=\frac{5}{8}$ of a dollar.
.75	(75 cents)	$=\frac{3}{4}$ of a dollar.
.875	(87½ cents)	$=\frac{7}{8}$ of a dollar.
.90	(90 cents)	$=\frac{9}{10}$ of a dollar.

By the table add $\$35\frac{2}{5}$, $\$61\frac{9}{10}$, $\$81\frac{1}{4}$, $\$116\frac{3}{10}$ and $\$51\frac{1}{10}$.

Ans. \$272.90.

Explanation :

$$\$ 35\frac{3}{8} = \$ 35.40$$

$$61\frac{9}{10} = 61.90$$

$$8\frac{1}{4} = 8.25$$

$$116\frac{3}{10} = 116.30$$

$$51\frac{1}{20} = 51.05$$

Total amount\$272.90

Add $\$116\frac{3}{8}$, $\$58\frac{7}{8}$, $\$265\frac{3}{10}$, $\$565\frac{1}{10}$, and from the sum take $\$92\frac{7}{8}$.

Ans. $\$912.80$.

Explanation :

$$\$116\frac{3}{8} = \$ 116.40 = \$ 116.400$$

$$58\frac{7}{8} = 58.875 = 58.875$$

$$265\frac{3}{10} = 265.30 = 265.300$$

$$565\frac{1}{10} = 565.10 = 565.100$$

$$\$1,005.675 \quad \$1,005.675$$

$$\text{Subtract} \quad 92.875$$

Remainder \$ 912.800

By Tables 2 and 3, add $\$150$ and $\frac{1}{2}$ cent, $\$328\frac{3}{8}$, $\$39$ and 1 mill, $\$437\frac{5}{8}$, $\$125$ and 5 cents, from the sum take $\$800$ twenty-two and $\frac{1}{2}$ cents.

Explanation :

$$\$150 + \frac{1}{2}\text{cent} = \$ 150.005 \text{ (Table 2)}$$

$$\$328\frac{3}{8} = 328.375 \text{ (Table 3)}$$

$$\$39 + 1 \text{ mill} = 39.001 \text{ (Table 2)}$$

$$\$437\frac{5}{8} = 437.625 \text{ (Table 3)}$$

$$\$125 + 5 \text{ cents} = 125.050 \text{ (Table 1)}$$

$$\$1,080.056$$

$$\text{Less } \$800 + 22\frac{1}{2} \text{ cents} = \$ 800.225 \text{ (Tables 2 and 3)}$$

$$\$ 279.831$$

Add $\$144\frac{1}{5}$, $72\frac{7}{8}$, $9\frac{1}{2}$, $235\frac{1}{4}$, $42\frac{1}{10}$.

Ans. \$503.925.

Add one dollar one mill, 63 dollars and 6 cents, 122 dollars and 20 cents, 91 dollars and 22 cents, 1001 dollars 1 cent and 2 mills, 36 dollars and sixty cents and 6 mills.

Ans. \$1,315.099.

Add $\$49\frac{2}{5}$, $\$68\frac{7}{8}$, $\$126\frac{9}{10}$, $\$131\frac{1}{20}$.

Ans. \$376.225.

Add $\$20\frac{1}{20}$, $\$99\frac{1}{2}$, $\$292\frac{1}{4}$, $\$6\frac{3}{4}$, $\$6,042\frac{1}{5}$, $\$111\frac{7}{8}$.

Ans. \$6,572.625.

Add $\$56\frac{3}{8}$, $\$101\frac{2}{20}$, $\$621\frac{1}{2}$, $\$33\frac{1}{10}$, $\$75\frac{2}{5}$, $\$1,000$.-
 $10\frac{1}{2}$.

Ans. \$1,887.58.

DECIMAL SUBTRACTION.

From $\$999\frac{3}{8}$ take $\$27\frac{1}{2}$.

Ans. \$971.875.

From $\$10,375\frac{1}{5}$ take $\$156\frac{9}{10}$.

Ans. \$10,218.30.

Add $\$100,260\frac{7}{8}$, $\$1.044\frac{2}{5}$, $\$500\frac{1}{10}$, $\$22\frac{1}{2}$, from their sum subtract $\$999\frac{1}{4}$.

their sum subtract $\$999\frac{1}{4}$.

Ans. \$100,828.625.

Adding and subtracting decimals require the same process as adding and subtracting simple numbers, due regard being had for the location of the decimal point and position of the decimal numbers.

DECIMAL MULTIPLICATION.

To multiply decimal fractions requires the same operation as that performed in multiplication of simple numbers.

There must be as many decimals in the answer as

are in both multiplier and multiplicand added together.

Point off with a decimal point as many decimals in the answer as are in both multiplier and multiplicand, counting from the right towards the left.

Should the multiplication not give a sufficient number of decimals, in the product, prefix naughts to the left of it to make the required number.

Multiply two and $\frac{7}{10}$ by 25 and $\frac{3}{10}$.

$$2.7 \times 25.3 =$$

$$\begin{array}{r} 25.3 \\ 2.7 \\ \hline 1771 \\ 506 \\ \hline 68.31 \end{array}$$

There is one decimal in the top, and one in the bottom number shown here; two must be cut off in the answer, commencing on the right and counting towards the left.

Multiply 3.125×50 .

$$\begin{array}{r} 3.125 \\ 50 \\ \hline 156.250 \end{array}$$

There are three decimals in the multiplicand and none in the multiplier—point off three in the answer.

Multiply .005 (five thousandths) by .8 (eight-tenths).

$$\begin{array}{r} .005 \\ .8 \\ \hline .0040 \end{array}$$

The multiplication here gives 40 as a product, but as both the bottom and top numbers contain four decimals added together, four must be shown in the answer to make which two naughts are prefixed to the left of the 40, the answer, then, is four one-thousandths.

Multiply .25 by 50.64.

$$\begin{array}{r}
 50.64 \\
 \times .25 \\
 \hline
 25320 \\
 10128 \\
 \hline
 12.6600
 \end{array}$$

In this multiplication the two naughts in the product count nothing for additional value; the answer will then read, twelve and sixty-six one-hundredths.

NOTE.—Twenty-five one-hundredths of anything being $\frac{1}{4}$ of it, the same result will be obtained by dividing by 4:

$$\begin{array}{r}
 4) 50.64 \\
 \hline
 12.66
 \end{array}$$

DIVISION OF DECIMALS.

To find the quotient (answer) in decimal division requires the same process as an operation in division of simple or whole numbers.

The dividend corresponding to the product in multiplication, must contain as many decimal places as are shown to be in both factors—divisor and quotient.

There must be as many decimals in the answer as those in the dividend exceed those in the divisor.

Should the divisor contain more decimals than the dividend, annex naughts to the dividend until they equal in number those in the divisor; the division will be performed then as in whole numbers with no decimals in the answer.

1. Divide 31.92 by .42.

Explanation :

$$\begin{array}{r}
 .42)31.92(76 \\
 \underline{294} \\
 252 \\
 \underline{252}
 \end{array}$$

There being an equal number of decimals in both divisor (.42) and dividend (.92) they cancel each other and the answer is a whole number.

It is usual in practice in such examples to take out both decimal points and divide as in whole numbers.

2. Divide 319.2 by .42.

Explanation :

$$\begin{array}{r}
 .42)319.20(760 \\
 \underline{294} \\
 252 \\
 \underline{252} \\
 0
 \end{array}$$

In this division only *one* decimal appears in the dividend (.2), and since the dividend must contain as many decimals as the divisor, a naught is annexed to the .2, making it now .20 ($\frac{20}{100}$), the operation performed as in the preceding example (1), giving 760 as a whole number for an answer.

NOTE.—Adding a naught to the .2, adds nothing

in value to it—only cyphers annexed as decimals to the dividend, facilitating the operation of division and making clear the character of the answer.

3. Divide 3.192 by .42.

Explanation:

$$\begin{array}{r} .42)3.192(7.6 \\ \underline{294} \\ 252 \\ \underline{252} \end{array}$$

In this example one decimal appears in the answer. Note there are three decimals in the dividend (.192) and two in the divisor (.42), hence the number in the dividend *exceed* the number in the divisor one; this number (1) then is given in the answer.

4. Divide .3192 by .42.

Explanation:

$$\begin{array}{r} .42).3192(.76 \\ \underline{294} \\ 252 \\ \underline{252} \end{array}$$

Four decimals in the dividend (.3192) are two more than in the divisor (.42), hence two decimals are placed in the answer.

5. Divide 3192 by 4.2.

Explanation:

$$\begin{array}{r} 4.2)3192.0(760 \\ \underline{294} \\ 252 \\ \underline{252} \\ 0 \end{array}$$

In this example, as in No. 2, the same result is obtained, namely, 760 whole numbers. The divisor (4.2) containing *one* decimal, the same number is placed in the dividend by annexing one naught.

6. Divide .03192 by .42.

Explanation:

$$\begin{array}{r} .42).03192(.076 \\ \underline{294} \\ 252 \\ \underline{252} \end{array}$$

Five decimals in the dividend here exceed those in the divisor by two, making three more in the dividend, hence three decimals must be in the answer, and as the division gave only 76, a cipher is *prefixed* to the 76, making .076 as the answer.

7. Divide .03192 by .042.

Explanation:

$$\begin{array}{r} .042).03192(.76 \\ \underline{294} \\ 252 \\ \underline{252} \end{array}$$

Five decimals in the dividend exceed by *two* those in the divisor, so, two decimals are placed in the answer.

From the preceding examples a general rule may be formed for division of decimals.

RULE.—*Make the division as in simple numbers, pointing off from the right hand side of the answer as many places for decimals, as the number in the dividend exceeds those in the divisor; should the answer*

not show so many, prefix naughts to supply the deficiency.

8. Divide .00034 by 1.7.

Ans. .0002.

9. Divide 40.36 by .27.

Explanation:

$$\begin{array}{r}
 .27)40.360000(149.4814+ \\
 \underline{27} \\
 133 \\
 \underline{108} \\
 256 \\
 \underline{243} \\
 130 \\
 \underline{108} \\
 220 \\
 \underline{216} \\
 40 \\
 \underline{27} \\
 130 \\
 \underline{108} \\
 22
 \end{array}$$

It will be seen that the two decimals in the dividend equal those in the divisor, giving from the division 149 as a whole number, but the division is continued to four decimal places by adding naughts until car-

ried to a point where the division repeats itself, and will never end evenly.

In operations of this kind the division may be extended to any number of decimals by the addition of naughts to the dividend.

Reversing the operation by multiplication gives the proof.

TABLE OF POINTS.

TABLE 4.

1 point	equals	.0001	of a dollar		
2 points	"	.0002	" "	"	
3 "	"	.0003	" "	"	
4 "	"	.0004	" "	"	
5 "	"	.0005	" "	"	
6 "	"	.0006	" "	"	
7 "	"	.0007	" "	"	
8 "	"	.0008	" "	"	
9 "	"	.0009	" "	"	
10 "	"	.0010	" "	"	
20 "	"	.0020	" "	"	
25 "	"	.0025	" "	"	
50 "	"	.0050	" "	"	
75 "	"	.0075	" "	"	
100 "	"	.0100	" "	"	= 1 cent
250 "	"	.0250	" "	"	= 2½ cents
300 "	"	.0300	" "	"	= 3 cents
500 "	"	.0500	" "	"	= 5 cents
1000 "	"	.1000	" "	"	= 10 cents

Cotton quotations being given in common fractions, and computations being more readily ascertained by use of decimal fractions, the following table is given showing their relative value:

COMMON FRACTIONS WITH DECIMAL EQUIVALENTS—

TABLE 5.

	$\frac{1}{32} = .03125$	of a dollar
$\frac{1}{16} = \frac{2}{32}$	$= .0625$	” ” ”
$\frac{3}{32}$	$= .09375$	” ” ”
$\frac{1}{8} = \frac{2}{16} = \frac{4}{32}$	$= .125$	” ” ”
$\frac{5}{32}$	$= .15625$	” ” ”
$\frac{3}{16} = \frac{6}{32}$	$= .1875$	” ” ”
$\frac{7}{32}$	$= .21875$	” ” ”
$\frac{1}{4} = \frac{2}{8} = \frac{4}{16} = \frac{8}{32}$	$= .250$	” ” ”
$\frac{9}{32}$	$= .28125$	” ” ”
$\frac{5}{16} = \frac{10}{32}$	$= .3125$	” ” ”
$\frac{11}{32}$	$= .34375$	” ” ”
$\frac{3}{8} = \frac{6}{16} = \frac{12}{32}$	$= .375$	” ” ”
$\frac{13}{32}$	$= .40625$	” ” ”
$\frac{7}{16} = \frac{14}{32}$	$= .4375$	” ” ”
$\frac{15}{32}$	$= .46875$	” ” ”
$\frac{1}{2} = \frac{2}{4} = \frac{4}{8} = \frac{8}{16} = \frac{16}{32}$	$= .500$	” ” ”
$\frac{17}{32}$	$= .53125$	” ” ”
$\frac{9}{16} = \frac{18}{32}$	$= .5625$	” ” ”
$\frac{19}{32}$	$= .59375$	” ” ”
$\frac{5}{8} = \frac{10}{16} = \frac{20}{32}$	$= .625$	” ” ”
$\frac{21}{32}$	$= .65625$	” ” ”
$\frac{11}{16} = \frac{22}{32}$	$= .6875$	” ” ”
$\frac{23}{32}$	$= .71875$	” ” ”
$\frac{3}{4} = \frac{6}{8} = \frac{12}{16} = \frac{24}{32}$	$= .750$	” ” ”
$\frac{25}{32}$	$= .78125$	” ” ”
$\frac{13}{16} = \frac{26}{32}$	$= .8125$	” ” ”
$\frac{27}{32}$	$= .84375$	” ” ”
$\frac{7}{8} = \frac{14}{16} = \frac{28}{32}$	$= .875$	” ” ”
$\frac{29}{32}$	$= .90625$	” ” ”
$\frac{15}{16} = \frac{30}{32}$	$= .9375$	” ” ”
$\frac{31}{32}$	$= .96875$	” ” ”
$1 = \frac{2}{2} = \frac{4}{4} = \frac{8}{8} = \frac{16}{16} = \frac{32}{32}$	$= 1.000$	” ” ”

Reversing the tabular form of decimals, for a ready and convenient reference, this will be found very useful as an aid.

No fractions with equivalent decimals are exhibited lower than sixteenths, which in turn, show relative values in "points."

TABLE 6.

.000625=.0006 $\frac{1}{4}$	of a dollar = $\frac{1}{16}$	of a cent = $6\frac{1}{4}$	pts.
.00125 =.0012 $\frac{1}{2}$	" " "	= $\frac{1}{8}$	" " " = $12\frac{1}{2}$ "
.001875=.0018 $\frac{3}{4}$	" " "	= $\frac{3}{16}$	" " " = $18\frac{3}{4}$ "
.0025 =	" " "	= $\frac{1}{4}$	" " " = 25 "
.003125=.0031 $\frac{1}{4}$	" " "	= $\frac{5}{16}$	" " " = $31\frac{1}{4}$ "
.00375 =.0037 $\frac{1}{2}$	" " "	= $\frac{3}{8}$	" " " = $37\frac{1}{2}$ "
.004375=.0043 $\frac{3}{4}$	" " "	= $\frac{7}{16}$	" " " = $43\frac{3}{4}$ "
.0050 =	" " "	= $\frac{1}{2}$	" " " = 50 "
.005625=.0056 $\frac{1}{4}$	" " "	= $\frac{9}{16}$	" " " = $56\frac{1}{4}$ "
.00625 =.0062 $\frac{1}{2}$	" " "	= $\frac{5}{8}$	" " " = $62\frac{1}{2}$ "
.006875=.0068 $\frac{3}{4}$	" " "	= $\frac{11}{16}$	" " " = $68\frac{3}{4}$ "
.0075 =	" " "	= $\frac{3}{4}$	" " " = 75 "
.008125=.0081 $\frac{1}{4}$	" " "	= $\frac{13}{16}$	" " " = $81\frac{1}{4}$ "
.00875 =.0087 $\frac{1}{2}$	" " "	= $\frac{7}{8}$	" " " = $87\frac{1}{2}$ "
.009375=.0093 $\frac{3}{4}$	" " "	= $\frac{15}{16}$	" " " = $93\frac{3}{4}$ "
.0100 =	= 1 cent	= $\frac{16}{16}$	" " " = 100 "

For convenience the points are generally expressed in concrete numbers, as 2 points, 3 points, $6\frac{1}{4}$ points, $7\frac{1}{2}$ points, instead of the long decimal showing equivalent value.

Where cents are connected with the points, the decimal notation is usually disregarded, and a dot placed between the cents and points, making thereby cotton calculations easier by the avoidance of a multiplicity of figures.

Ten cents and 2 points, 10.02, are read ten naught two.

Six cents and 1 point, 6.01, are read, six naught one.

Twelve cents and 20 points, 12.20, are read, twelve twenty.

Two cents and 78 points, 2.78, are read, two seventy-eight.

Fifteen cents and 25 points, 15.25, are read, fifteen and a quarter.

The reader who desires to be thorough in cotton calculations is urged to begin at the beginning of this work—"Arithmetic of Cotton"—follow it through carefully, and in a short time will be able to make any computation on cotton he may desire.

It is the author's intention to set forth so clearly and by gradual gradation the elucidation of all the problems, that one can scarcely avoid understanding the manipulation of them, who will take a little time and study for himself.

As nearly all cotton calculations involve the use of both the common and decimal fractions, their meaning can be readily ascertained by reference to the tables, which explains the most required of them.

Where cotton quotations are given involving the use of common fractions, and the reader finds it difficult to execute his work with such fractions, he can find their corresponding values in the decimal table showing equivalent value for such fraction and use this equivalent decimal in lieu of the common fraction.

EXAMPLES INVOLVING THE USE OF THE
CENT—DECIMAL EQUIVALENT \$.01
—100 POINTS.

PROBLEMS.

Ex. 1. A sells 1 bale of cotton weighing 520 pounds at 10 cents a pound. What amount of money does he receive?

Ans. \$52.00.

NOTE.—It is evident each pound of cotton brings 10 cents and the number of pounds is 520, he receives 520 times 10 cents, which equals 5200 cents. Two figures must always be used to express cents, and as cents are decimal parts of a dollar, then to show value in dollars a dot (.)—the decimal point—is placed to the left of cents—thus .10 (ten one-hundredths).

$$.10 \times 520 = \$52.00.$$

Explanation:

$$\begin{array}{r} .10 \\ 520 \\ \hline 200 \\ 50 \\ \hline 52.00 \end{array}$$

The multiplicand here contains two decimals, hence two decimals must be cut off in the answer, commencing on the right side of the answer and counting towards the left.

Ex. 2. B sells 2 bales of cotton; their weights are 516 and 534 pounds, respectively, for 10 cents a pound. What is their total value at this price?

Ans. \$105.00.

Explanation:

Add weight of both bales.

One bale weighs..... 534 pounds

One bale weighs..... 516 pounds

Both bales weigh.....1050 pounds

10 cents multiplied by 1050 pounds gives the total value. $10 \times 1050 = 10500$ or

$$\begin{array}{r} 1050 \\ .10 \\ \hline \end{array}$$

\$105.00

Ans. \$105.00.

NOTE.—Point off 2 decimals in the answer.

Ex. 3. John Smith sold 3 bales of cotton at nine (.09 cents) cents a pound for all of it. When re-weighed it lost 10 pounds from gin weights. The bales weighed at the gin 516, 494, and 530 pounds, respectively. What was their total value?

Ans. \$137.70.

Explanation: Their weights were

1 bale 516 pounds

1 bale 494 pounds

1 bale 530 pounds

Total 1540 pounds

Lost 10 pounds

Left 1530 pounds at 9 cents

.09

Amount \$137.70

NOTE.—Two decimals express the cents (.09) and two are counted and pointed off in the answer.

Ex. 4. B sold 2 bales of cotton, one weighing 525 pounds at 8 cents a pound, and the other, 540 pounds at 7 cents a pound. He paid 10 cents a bale for weighing. What amount of money did he receive?

Ans. \$79.60.

Explanation.—One bale of 525 pounds at 8 cents, equals \$42.00. One bale of 540 pounds at 7 cents equals \$37.80.

The two amounts added equal.....	\$79.80
Less the weighing (10 cents each bale).....	.20
	<hr/>
	\$79.60

NOTE.—For convenience multiply weight of each bale by its price.

525 pounds	540 pounds
.08	.07
<hr/>	<hr/>
\$42.00	\$37.80
Price of 1 bale	\$42.00
Price of 1 bale	37.80
	<hr/>
Total value	\$79.80
The weighing cost	.20
	<hr/>
Leaving net	\$79.60

Ex. 5. John Myres sold 2 bales of cotton weighing, each, 535 and 515 pounds at 9 cents a pound, also, 3 bales each 495, 565 and 510 pounds at 7 cents a pound. He owed 15 dollars for ginning and 10 cents a bale for weighing. How much money did he receive for the cotton and how much had he left after paying expenses?

Ans. Total received, \$204.40; after paying expenses, \$188.90.

Explanation: Add the weights of the first 2 bales and multiply the sum by the price; add the last 3 bales and multiply the sum by the price for same.

1 bale weighing	535 pounds
1 bale weighing	515 pounds

Total weight	1050
--------------	------

$1050 \times .09 = \$94.50$ for 2 bales.

1 bale weighing	495 pounds
1 bale weighing	565 pounds
1 bale weighing	510 pounds

Total weight	1570
--------------	------

$1570 \times .07 = \$109.90$	price for 3 bales
94.50	price for 2 bales

Total amount \$204.40 price for 5 bales

Ginning \$15.00

Weighing .50

Total expenses	15.50
----------------	-------

Net receipts	\$188.90
--------------	----------

Ex. 6. John Williams was offered 10 cents a pound for 4 bales of cotton, which price he refused, but sold two months later for 9 cents a pound and lost 10 pounds in weight. Cotton weight at first was 2010 pounds. What was his loss?

Ans. \$21.00.

Explanation.— $10 \times 2010 = \$201.00$ the price he could have received at first, then the first price offered was

$$\begin{array}{r} \$201.00 \\ .09 \times 2000 = (\text{price now}) \quad 180.00 \\ \hline \end{array}$$

Total loss \$ 21.00

NOTE.—The explanation here has the operation of multiplication indicated.

Ex. 7. Mr. Anderson could get 10 cents a pound for 21 bales of cotton weighing 11,340 pounds with no expenses deducted; he sold 4 months later for 11 cents a pound: charges against the cotton were, insurance 30 cents a bale, weighing 10 cents a bale, delivering to depot 10 cents a bale. The cotton gained 60 pounds in weight. What was his gain?

Ans. \$109.50.

Explanation:

Original weight	11,340 pounds
Gain in weight	60 pounds

Weight now	11,400 pounds
------------	---------------

$11 \times 11,400$ (price now) =	\$1,254.00
----------------------------------	------------

Insurance 21 bales at 30 cents =	\$ 6.30
----------------------------------	---------

Weighing 21 bales at 10 cents =	2.10
---------------------------------	------

Hauling 21 bales at 10 cents =	2.10
--------------------------------	------

Total expense	10.50
---------------	-------

Net price now	1,243.50
---------------	----------

Original weight 11,340 pounds:	
--------------------------------	--

$10 \times 11,340$ (first price) =	1,134.00
------------------------------------	----------

Total gain	\$ 109.50
------------	-----------

Ex. 8. Jones & Brown, ginnerers, having refused an offer of 9 cents a pound for 40 bales of cotton, held it five months and sold for 10 cents a pound. The cotton originally weighed 20,960 pounds, but gained 140 pounds on final sale. The charges against this cotton were, insurance, 60 cents; drayage, 10 cents; sampling, 10 cents; commission, 15 cents a bale. What was gained by holding?

Ans. Gain \$185.60.

NOTE.—Solve as example 7.

Ex. 9. What would be Jones & Brown's loss if they refuse 10 cents a pound, hold 5 months, sell for 9 cents a pound, loss 140 pounds in weight and charges the same as example 8?

Ans. Lost \$260.20.

Explanation:

Original weight $20,960 \times .10 = \$2,096.00$.

Original weight 20,960 pounds

Lost weight 140 pounds

Weight now 20,820 pounds

$.09 \times 20820 =$ \$1,873.80

Insurance $60 \times 40 = \$24.00$

Drayage $10 \times 40 = 4.00$

Sampling $10 \times 40 = 4.00$

Commission $15 \times 40 = 6.00$

Total expense (subtract) 38.00

Net amount now \$1,835.80

Value at 10 cents 2,096.00

Value at 9 cents less charges 1,835.80

Loss \$ 260.20

Ex. 10. Fred Smith is offered 11 cents a pound for 4 bales of cotton, 10 cents a pound for 5 bales of cotton, 9 cents a pound for 6 bales of cotton, 8 cents a pound for 10 bales of cotton, or 9 cents a pound for the whole lot. Cotton averages 500 pounds to a bale. Which price should he take?

Ans. Different prices for different lots.

Explanation :

	lbs.	cts.
4 bales 500 pounds =	2,000	$\times .11 = \$ 220.00$
5 bales 500 pounds =	2,500	$\times .10 = 250.00$
6 bales 500 pounds =	3,000	$\times .09 = 270.00$
10 bales 500 pounds =	5,000	$\times .08 = 400.00$

Total value	12,500	\$1,140.00
	$.09 \times 12,500$ pounds =	1,125.00

Would have lost at .09 all round \$ 15.00

EXAMPLES INVOLVING THE USE OF THE HALF CENT—DECIMAL EQUIVALENT \$.005—50 POINTS.

Remark 1.—By reference to Tables 1 and 3, it will be observed that $\frac{1}{2}$ is represented as .0050 (five one-thousandths) of a dollar, equivalent in value to 5 mills and showing 4 decimals. A naught (0) annexed to the right of a decimal adds nothing in value to it, as .5 ($\frac{5}{10}$), .50 ($\frac{50}{100}$), .500 ($\frac{500}{1000}$), all have the same value, hence when the decimal .0050 is written, the same value exists as if written .005, and to point off 3 decimal places in the product is sufficient.

Remark 2.—Let it be required to find the value of 1 bale of cotton of 500 pounds weight at $9\frac{1}{2}$ (.095) cents.

Here 9 cents is written .09
 One-half cent is written .005
 Nine and one-half cents is written (decimally) .095
 $.095 \times 500 = \$47.500$.

Try the same with 4 decimals.

$.0950 \times 500 = \$47.5000$, showing no gain in the total value.

Ex. 1. Will Smith sold 3 bales of cotton weighing 520, 535 and 485 pounds each at $10\frac{1}{2}$ cents a pound, and 2 bales weighing 510 and 525 pounds each at $9\frac{1}{2}$ cents. What is the value of the 5 bales?

Ans. \$260.02 $\frac{1}{2}$.

Explanation:

Add the weights of the 3 bales which are 1540 pounds.

Ten cents is written	\$.10
One-half cent is written	.005
	<hr/>
Their decimal, $10\frac{1}{2}$, is	.105
$.105 \times 1540 =$	

\$161.700

Add the 2 bales' weight, which is 1035.

Nine cents is written	\$.09
One-half cent is written	.005
	<hr/>
Then $9\frac{1}{2}$ cents is	\$.095
$.095 \times 1035 =$	

98.325

Total value for 5 bales

\$260.025

1540	1035
.105	.095
<hr/>	<hr/>
7700	5175
1540	9315
<hr/>	<hr/>
\$161.700	\$98.325

Each multiplier has 3 decimals—3 must be pointed off in the product—the answer is two hundred and sixty dollars and two and one-half cents.

Ex. 2. Mr. Williams sold his 7 bales of cotton, which had been exposed to the weather for several months, for $11\frac{1}{2}$ cents, if not damaged, but when delivered to buyer, it was shown to be badly injured. It was agreed to make nothing off in weight, but reduce the price $\frac{1}{2}$ cent a pound.

The cotton weighed 3650 pounds. What was realized from sale?

Ans. \$401.50.

Explanation :

First price 11.5 cents

Deducted for "country damage" 00.5 cents

Net price per pound 11.0 cents

$.11 \times 3650 = \$401.50$.

NOTE.—

$11\frac{1}{2}$ cents is \$.115 decimally

$\frac{1}{2}$ cent is .005 decimally

\$.110

$\frac{1}{2}$ cent from $11\frac{1}{2}$ cents leaves 11 cents.

Ex. 3. What was Mr. William's loss for weather or "country damage" on his cotton?

Ans. \$18.25.

Explanation :

$3650 \times 11\frac{1}{2}$ (first price) = \$419.75

3650×11 (sale price) = 401.50

Lost

\$ 18.25

Ex. 4. Find the value of 625 pounds at $12\frac{1}{2}$ cents, 1130 pounds at $11\frac{1}{2}$ cents, 1510 pounds at $10\frac{1}{2}$ cents a pound.

Ans. \$366.62 $\frac{1}{2}$.

Explanation :

$$.125 \times 625 = \$ 78.125$$

$$.115 \times 1130 = 129.950$$

$$.105 \times 1510 = 158.550$$

Total value \$366.625

NOTE.—All 3 multipliers here have 3 decimals, so 3 decimals must be pointed off in the answer.

Ex. 5. A man sold 5 bales of cotton weighing 2640 pounds for $9\frac{1}{2}$ cents a pound. One week before, he was offered $8\frac{1}{2}$ cents a pound for the same cotton. How much did he gain by holding one week?

Ans. \$26.40.

Explanation :

$$\text{Multiply } 9\frac{1}{2} \times 2640$$

$$\text{Multiply } 8\frac{1}{2} \times 2540$$

Subtract

NOTE.—If multiplication is made by use of the common fraction $\frac{1}{2}$, point off 2 decimal places in the product.

Ex. 6. A buyer bought 50 bales of cotton averaging $7\frac{1}{2}$ cents a pound in price, which he sold six months afterwards for $9\frac{1}{2}$ cents a pound. His expenses were \$1.50 a bale; what was his gain if the cotton weighed 26,000 pounds?

Ans. \$445.00.

Explanation:

$$.095 \times 26000 = \text{value received } \$2,470.00$$

$$.075 \times 26000 = \text{value paid } 1,950.00$$

$$\text{Difference} \qquad \qquad \qquad \$ 520.00$$

$$\text{His expenses were } \$1.50 \times 50 = 75.00$$

$$\text{Leaving net gain} \qquad \qquad \qquad \$ 445.00$$

Ex. 7. A farmer having 6 bales of cotton, sold 2 for 8 cents a pound, 2 months later sold 2 for $8\frac{1}{2}$ cents a pound; 3 months after this sold the other 2 for $9\frac{1}{2}$ cents a pound. The first 2 weighed 1125, the second 2, 990 and the third 2, 1105 pounds. What amount did he receive ?

$$\text{Ans. } \$279.12\frac{1}{2}.$$

Explanation:

$$.08 \times 1125 = \text{what?}$$

$$.085 \times 990 = \text{what?}$$

$$.095 \times 1105 = \text{what?}$$

Add the products.

Ex. 8. John Watkins raised 12 bales of cotton on 24 acres of ground. He paid $\frac{1}{4}$ for rent and $\frac{3}{4}$ of the expense for ginning, which was 3 dollars a bale. The cotton sold for $7\frac{1}{2}$ cents a pound; it weighed 6190 pounds. What amount did Mr. Watkins get for his cotton?

$$\text{Ans. } \$348.18\frac{3}{4}.$$

Explanation:

The total weight is 6190 pounds.

$\frac{3}{4}$ belongs to Watkins.

$\frac{1}{4}$ of total $= 1547\frac{1}{2}$ pounds.

$\frac{3}{4}$ of total $= 1547\frac{1}{2} \times 3 = 4642\frac{1}{2}$ pounds.

$$.075 \times 4642\frac{1}{2} = \$348.18\frac{3}{4}.$$

NOTE.— $4641\frac{1}{2} = 4642.5$ (the .5 is $\frac{5}{10}$).

$$\text{Then } .075 \times 4642.5 = 4642.5$$

$$\begin{array}{r} .075 \\ \hline 232125 \\ 324975 \\ \hline 348.1875 \end{array}$$

There is 1 decimal in the multiplicand and 3 in the multiplier, making 4 decimals to be cut off from the right of the product, giving 348 as a whole number and .1875 ($=18\frac{3}{4}$) as the fractional part of the product. (Reversing the multiplier and multiplicand for convenience.)

Ex. 9. What would be the landlord's value of the cotton?

Ans. \$116.06 $\frac{1}{4}$.

Explanation: The total weight is 6190 pounds. The landlord has $\frac{1}{4}$, which is 1547 $\frac{1}{2}$ pounds.

$$1547.5 \times .075 = \$116.06\frac{1}{4}, \text{ his part.}$$

Ex. 10. Prove that this is correct.

Explanation: The total weight is 6190 pounds.

$$6190 \times .075 = \$464.25.$$

$$\text{Mr. Watkins' } \frac{3}{4} = \$348.18\frac{3}{4}$$

$$\text{Landlord's } \frac{1}{4} = \$116.06\frac{1}{4}$$

$$\begin{array}{r} \text{Both} \\ \hline = \$464.25 \end{array}$$

Ex. 11. What amount of money did Mr. Watkins have after paying the ginning?

Ans. \$321.18 $\frac{3}{4}$.

Explanation: His total amount of money received was \$348.18 $\frac{3}{4}$.

He raised 12 bales.

$\frac{3}{4}$ of them were his.

$\frac{1}{4}$ of them was 3 bales.

$\frac{3}{4}$ of them were 3×3 bales $= 9$ bales.

3 (dollars) $\times 9$ (bales) $= \$27.00$.

He received	\$348.18 $\frac{3}{4}$
-------------	------------------------

He paid for ginning	27.00
---------------------	-------

Leaving for him	<u>\321.18\frac{3}{4}$</u>
-----------------	---

NOTE.—Bales are not multiplied by dollars, but as there are 9 bales, and the price for ginning is 3 dollars for each bale, it is evident 3 dollars must be for each bale, and as there are 9 of them, the multiplication is performed by multiplying the 3×9 to get the total amount. The 3 here is dollars, and the result is 9 times 3 dollars, equalling 27 dollars.

EXAMPLES INVOLVING THE USE OF THE QUARTER CENT—DECIMAL EQUIVA- LENT \$.0025—25 POINTS.

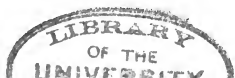
Remark.—The $\frac{1}{4}$ represented here shows the fractional part of a cent, which, decimally, is .01, and $\frac{1}{4}$ of it equals .0025 (twenty-five ten-thousandths) of a dollar. (See tables 1 and 3.)

Ex. 1. Tom Williams sold 5 bales of cotton weighing 2580 pounds at $8\frac{1}{4}$ cents a pound. What is the total value?

Ans. \$212.85.

Explanation: Multiply the weight by the price, $2580 \times .0825 = \$212.85$.

The 25 points involved necessitates the use of decimals to the fourth place.



NOTE.—Eight cents is .08
 Twenty-five points are .0025

Then 8 cents and 25 points = .0825
 decimally, which equals $8\frac{1}{4}$ cents.

$$\begin{array}{r}
 2580 \\
 .0825 \\
 \hline
 12900 \\
 5160 \\
 20640 \\
 \hline
 212.8500
 \end{array}$$

Cut off 4 figures in answer, as there are 4 decimals in the multiplier.

The operation can be performed this way:

$$\begin{array}{r}
 2580 \\
 8\frac{1}{4} \\
 \hline
 20640 \\
 645 \\
 \hline
 21285
 \end{array}$$

How can you tell what the product is?

Where will you place the dot or decimal point?

The instruction given in the use of the decimal in multiplication will guide the student. If a naught (0) is placed in front of the $8\frac{1}{4}$ then the multiplier would be .08 $\frac{1}{4}$ dollars and 2 figures would be cut off placing the dot in front of the 8, showing the answer to be 212.85.

Ex. 2. A sells 3 bales of cotton, 1 weighing 495 pounds at $10\frac{1}{4}$ cents, for the other 2, whose weights

are 512 and 518 pounds, he sells at $9\frac{1}{2}$ cents a pound. What is the total cash received?

Ans. \$148.58 $\frac{3}{4}$.

Explanation.—Multiply weight of first bale by $10\frac{1}{4}$ (.1025) cents, and the sum of the 2 bales by $9\frac{1}{2}$ (.095) cents.

$$\begin{aligned} 495 \times .1025 &= \$ 50.7375 \\ 512 + 518 &= 1030 \times .095 = 97.8500 \end{aligned}$$

Total received \$148.5875

Ex. 3. Henry Jones took 1500 pounds seed cotton to the gin for which he was offered $3\frac{1}{4}$ cents a pound in the seed, not selling on this offer he had it ginned, the cotton “thirded itself.” The ginning cost 3 dollars. He sold the bale for $10\frac{1}{4}$ cents a pound and the seed at the rate of 16 dollars a ton. Did he gain or lose, and how much by having the cotton ginned?

Ans. Gain \$7.50.

Explanation: Seed cotton weighed 1500 pounds.

$\frac{1}{3}$ = weight of bale = 500 pounds

$\frac{2}{3}$ = weight of seed = 1000 pounds

$$500 \times .1025 = \$51.25$$

$$2000 \text{ pounds weight equals } 1 \text{ ton} = \$16.00$$

$$1000 \text{ pounds weight equals } \frac{1}{2} \text{ ton} = 8.00 \quad 8.00$$

$$\text{Total received for cotton and seed} \quad \$59.25$$

$$\text{Less expense for ginning} \quad 3.00$$

$$\text{Net amount received} \quad \$56.25$$

$$1500 \text{ pounds seed cotton at } 3\frac{1}{4} \text{ cents} = 1500$$

$$\times .0325 = \text{value in the seed} = 48.75$$

$$\text{Gained by having it ginned} \quad \$ 7.50$$

NOTE.—This cotton is figured as having no loss from trash or dirt.

Ex. 4. Would Jones have gained anything had he sold the cotton for $9\frac{3}{4}$ cents a pound and the seed at 12 dollars a ton?

Ans. Gain, \$3.00.

Explanation:

$$500 \times .0975 = \$48.75$$

$$1000 = \frac{1}{2} \text{ ton} = (\text{at } \$12.00) \quad 6.00$$

$$\text{Total received, gross} \quad \$54.75$$

$$\text{Less ginning expenses} \quad 3.00$$

$$\text{Total received, net} \quad \$51.75$$

$$1500 \times .325 \text{ (} 3\frac{1}{4} \text{ cents)} = 48.75$$

$$\text{Gain} \quad \$ 3.00$$

Ex. 5. A farmer had a bale of cotton ginned in which there was an excess of moisture, causing the lint to show "gin cuts" and "naps;" had it been ginned dry it would have classed middling and been worth $10\frac{1}{2}$ cents a pound, but owing to imperfect ginning it was sold for $10\frac{1}{4}$ cents a pound and 10 pounds in weight deducted for dampness. Bale weighed 560 pounds before deduction. How much loss to this man for having his cotton ginned wet?

Ans. Lost $\$2.42\frac{1}{2}$.

Explanation:

$$560 \times .105 \text{ (} 10\frac{1}{2} \text{)} = \$58.800$$

$$550 \times .1025 \text{ (} 10\frac{1}{4} \text{)} = 56.375$$

$$\$ 2.425$$

Ex. 6. A grower took 3 bales of cotton to market

weighing 516, 522 and 532 pounds, for which he was offered $9\frac{1}{4}$ cents, gin weights, or $9\frac{1}{2}$ cents and have the cotton re-weighed at the public scales; he sold on gin weights. What was his gain or loss?

The re-weights were 506, 519 and 530.

Ans. Lost \$2.50.

Explanation.—Add gin weights and multiply by $9\frac{1}{4}$ (.0925) cents. Add the reweights and multiply by $9\frac{1}{2}$ (.095) cents. Subtract the lesser from the greater number; if the product of gin weights show greater, there will be a gain, otherwise a loss.

Ex. 7. Tom Sanders found the market down $\frac{1}{4}$ (25 points) when he offered his 4 bales of cotton for sale which weighed 2620 pounds. What was his loss by the decline if he sold for $9\frac{1}{4}$ cents?

Ans. Lost \$6.55.

Explanation:

$$(1) 2620 \times .095 = \text{price before decline } \$248.90$$

$$2620 \times .0925 = \text{price after decline } 242.35$$

Lost

\$ 6.55

$$(2) \begin{array}{ll} \text{First price} & .0950 \text{ (} 9\frac{1}{2} \text{)} \end{array}$$

$$\begin{array}{ll} \text{Second price} & .0925 \text{ (} 9\frac{1}{4} \text{)} \end{array}$$

$$\begin{array}{ll} \text{Difference (loss)} & .0025 \text{ (} \frac{1}{4} \text{)} \end{array}$$

$$2620 \times .0025 = \$6.55.$$

Ex. 8. Mr. Henderson offered to take 10 cents a pound for his 5 bales of cotton and deduct 30 pounds for damage; the buyer made a counter offer of $9\frac{3}{4}$ cents a pound instead, with no deduction for weight; the cotton weighed, without deduction, 2580 pounds. Mr. Henderson sold at the buyer's offer; did he gain or lose in the sale?

Ans. Lost \$3.45.

Ex. 9. A tenant rented 40 acres of land at 3 dollars an acre, which land was planted in cotton and produced 10 bales weighing 5390 pounds, which he sold at $8\frac{1}{4}$ cents a pound, and paid for ginning \$32.34. Would he have gained or lost in the transaction had he rented to pay $\frac{1}{4}$ the cotton and each pay his own expense for ginning at 60 cents a hundred?

Ans. Gained \$16.93 to pay $\frac{1}{4}$ rent.

Explanation:

$5390 \times .0825$ ($8\frac{1}{4}$) = value of cotton \$444.675

Less rent 120.000

\$324.675

Ginning

32.340

Net amount

\$292.335

$\frac{1}{4}$ of 5390 pounds = 1347.5 = rent.

$5390 - 1347.5 = 4042.5$ = tenant's part.

$4042.5 \times .0825$ ($8\frac{1}{4}$) = value \$333.50+

4042.5×60 = cost ginning 24.25+

Net amount renting for part of crop \$309.25+

Net amount renting money rent 292.33+

Gain

\$ 16.92

Ex. 10. The landlord received from the tenant (Ex. 9), cash, \$120; what would he have received for $\frac{1}{4}$ the cotton, if sold at the price the tenant secured, and pay his part of the ginning?

Ans. \$103.08+.

Explanation:

$\frac{1}{4}$ is 1347.5 pounds $\times .0825$ ($8\frac{1}{4}$) = \$111.16+

Ginning $1347\frac{1}{2} \times 60$ cents a hundred = 8.08+

Net receipt

\$103.08+

EXAMPLES INVOLVING THE USE OF THE
ONE-EIGHTH ($\frac{1}{8}$) CENT—DECIMAL
EQUIVALENT \$.00125— $12\frac{1}{2}$ POINTS.

Ex. 1. A man sold 1 bale of cotton weighing 560 pounds at $9\frac{1}{8}$ cents a pound. What was its value in dollars and cents?

Ans. \$51.10.

Explanation: Multiply the weight of the bale by its price per pound. $560 \times .09125$ ($9\frac{1}{8}$) = \$51.10.

NOTE.—Nine cents =

\$.09

One-eighth cent =

.00125

Nine and one-eighth cent = \$.09125

Ex. 2. Find the worth of 1600 pounds of seed cotton at $3\frac{1}{8}$ cents a pound.

Ans. \$50.00.

Explanation: $1600 \times .03125$ = (See Table 6).

Ex. 3. Mr. Smith sold 8 bales of cotton for $11\frac{1}{4}$ cents a pound to a street buyer, after refusing $11\frac{1}{8}$ cents from the first bidder. What did he gain by selling at $11\frac{1}{4}$ cents? Cotton weight 4120 pounds.

Ans. \$5.15.

Explanation:

$$4120 \times .1125 \quad (11\frac{1}{4}) = \$463.50$$

$$4120 \times .11125 \quad (11\frac{1}{8}) = 458.35$$

\$ 5.15

NOTE.—In first multiplication, count off 4 figures, and in second count off 5 figures in the answer.

Ex. 4. Mr. Anderson sold 1 bale of cotton, 512 pounds, at $9\frac{1}{2}$; 1 bale, 520 pounds, at $9\frac{1}{4}$; and 1

bale, 560 pounds, at $9\frac{1}{8}$ cents a pound. How much money did he receive for all?

Ans. \$148.54.

Ex. 5. Diltz & Weaver bought 50 bales of cotton, weighing 25,500 pounds, and sold it for $\frac{1}{8}$ advance. What was their gain on the sale?

Ans. \$31.87 $\frac{1}{2}$.

Explanation: (1) Multiply total weight by price: $25,500 \times .00125$ ($\frac{1}{8}$) = \$31.875. (2) $25,500 \div 50$ = weight of each bale = 510 pounds $\times .00125$ = gain on each bale = \$.6375; \$.6375 = 63 $\frac{3}{4}$ cents $\times 50$ = gain on all the bales = \$31.875.

.6375	25,500
50	.00125
<hr/>	<hr/>
31.8750	127500
	51000
	25500
	<hr/>
	31.87500

NOTE.—(1) In first multiplication point off 4 decimals in answer, in the second, 5. (2) The same result may be obtained by dividing the total weight (25,500 pounds) by 8, as in abstract numbers, and is equivalent to multiplying by 8 *decimally*.

8)25,500

31.875

NOTE.—(2) It should be noted that $\frac{1}{8}$ of a cent is made on each pound of cotton, equal to 12 $\frac{1}{2}$ cents on each one hundred pounds, and to determine the location of the decimal point, first divide $25,500 \div 100$, which would give 255.

$255 \div 8 = 31$ as a whole number, then annex naughts to the 255 and continue the division until it is exact or repeats itself, then *after* the whole number place the period, the numbers following are the fractional numbers. The third naught added gives no increase in value, but enables the operation to be completed to exactness.

Ex. 6. John Knox having 900 pounds of seed cotton, bought 600 pounds more to complete his bale. He paid $3\frac{1}{8}$ cents a pound for the 600 pounds. The cotton thirded itself including bagging and ties, when ginned, the bale was sold for $10\frac{1}{8}$ cents a pound, and the seed at the rate of 20 dollars a ton. What did Mr. Knox gain on the seed cotton bought?

Ans. Gain, \$5.50.

Explanation:

600 pounds = weight of cotton bought.		
200 pounds = weight of $\frac{1}{3}$ cotton bought.		
$200 \times .10125$ ($10\frac{1}{8}\%$) =		\$20.25
600 pounds = weight of seed cotton.		
200 pounds = weight of lint.		
$600 - 200 = 400$ pounds seed.		
2000 pounds weight of 1 ton.		
400 pounds = $\frac{1}{5}$ weight of 1 ton.		
2000 pounds are worth	\$20.00	
400 pounds are worth $\frac{1}{5}$ of	$20.00 =$	4.00
Value of seed and lint received		\$24.25
600 pounds $\times .03125$ ($3\frac{1}{8}\%$) = cost =		18.75
Gain on 600 pounds seed cotton		\$ 5.50

Ex. 7. Henry Brown sold 1 bale of cotton, 520 pounds, at $6\frac{5}{8}$ cents a pound. How much money did he get for it?

Ans. \$32.45.

Explanation: If $\frac{1}{8} = .00125$, $\frac{5}{8}$ will be 5 times $.00125 = .00625$. (See Table 6.)

Six cents is	\$.06
Five-eighths are	.00625

Six and five-eighths = \$.06625
 $520 \times .06625 = \text{price} = \32.45 .

Ex. 8. Mr. Jones sold 10 bales of cotton; 3 bales, 1616 pounds $10\frac{1}{8}$ cents a pound; 4 bales, 2120 pounds at $9\frac{7}{8}$ cents a pound; 3 bales, 1560 pounds at $9\frac{1}{8}$ cents a pound. What was the total value of all?

Ans. \$515.22.

Ex. 9. A grower sold 1 bale of cotton for $9\frac{7}{8}$, 1 for $9\frac{5}{8}$ and 1 for $9\frac{3}{8}$ cents a pound. Supposing the bales to be of equal weight, what would be the average price?

Ans. $9\frac{5}{8}$ cents.

Explanation: (1) By inspection it is seen that the price of 1 bale is $9\frac{5}{8}$ cents a pound, $\frac{2}{8}$ more make the $\frac{7}{8}$; $\frac{2}{8}$ less = $\frac{3}{8}$; the $\frac{2}{8}$ above and the $\frac{2}{8}$ below the $\frac{5}{8}$, offset or cancel each other, leaving $9\frac{5}{8}$ cents as the average.

(2)	1 bale at .09875 ($9\frac{7}{8}$)
	1 bale at .09625 ($9\frac{5}{8}$)
	1 bale at .09375 ($9\frac{3}{8}$)

Add price of 3 bales 3).28875

Divide by 3 (No. bales) = .09625 ($9\frac{5}{8}$)

Ex. 10. A sold 3 bales of cotton for \$161 $\frac{3}{8}$, 2 bales of cotton for \$102 $\frac{1}{8}$, 5 bales of cotton for \$252 $\frac{3}{8}$. What is the total value in dollars and cents?

Ans. \$515.87 $\frac{1}{2}$.

Explanation: Referring to Table 5—

$\$3\frac{3}{8}$ equals \$.375

$\frac{1}{8}$ equals .125

$\frac{3}{8}$ equals .375

Total = \$.875 = $87\frac{1}{2}$ cents

EXAMPLES INVOLVING THE USE OF THE ONE-SIXTEENTH CENT— $\frac{1}{16}$ —DECIMAL EQUIVALENT .000625— $6\frac{1}{4}$ POINTS.

Ex. 1. What is the value of 1 bale of cotton, weighing 534 pounds at $7\frac{1}{16}$ cents a pound?

Ans. $37.71\frac{3}{8}$.

Explanation: By referring to Table 6, one-sixteenth of a cent decimally is .000625

Seven cents are .07

Seven and $\frac{1}{16}$ cents are .070625

$534 \times .070625 = \$37.71375$.

NOTE.—Table 6, .00375 = $\frac{3}{8}$. Note the 71 cents occupy the place of the 2 naughts.

Ex. 2. A man sold 1 bale of cotton, 544 pounds, at $9\frac{1}{16}$ cents, 1 bale of cotton, 528 pounds, at $8\frac{1}{16}$ cents. What is the value of both?

Ans. \$91.87.

Explanation:

(1) Nine cents are \$.09

One-sixteenth cent is .000625

Nine and one-sixteenth = \$.090625

$544 \times .090625 = \$49.30$

$528 \times .080625 = 42.57$

Value of both bales \$91.87

(1)	.090625	.080625
	544	528
	<hr/>	<hr/>
	362500	645000
	362500	161250
	453125	403125
	<hr/>	<hr/>
	49.300000	42.570000

NOTE.—(1) For convenience the multiplier, which contains 6 decimals, is placed at the top, the same number to be pointed off in the answer.

(2)	544	528
	.09 $\frac{1}{16}$.08 $\frac{1}{16}$
	<hr/>	<hr/>
	4896	4224
	34	33
	<hr/>	<hr/>
	\$49.30	\$42.57

NOTE.—(2) In the last multiplication only 2 decimals are cut off as the multiplier is cents and has only 2 decimals. In multiplying by the one-sixteenth, divide the weight of the bale by 16 and add to the first partial product in the multiplication.

Ex. 3. John Knox was offered $8\frac{1}{2}$ cents a pound for 10 bales of cotton weighing 5160 pounds, but refused the offer, held his cotton and sold next day for $\frac{1}{16}$ cents a pound less. What did he lose by not selling on first offer?

Ans. Lost $\$3.22\frac{1}{2}$.

Explanation:

(1) 5160 pounds $\times .085$ ($8\frac{1}{2}$) = first offer \$438.60.

$$(2) \quad .085 - .000625 = .084375 = 8\frac{7}{16}.$$

$$.085000$$

$$.000625$$

$$.084375 = 8\frac{7}{16}$$

Again—

$$8\frac{1}{2} =$$

$$8\frac{8}{16}$$

Less

$$\frac{1}{16}$$

Equals

$$8\frac{7}{16} = .084375$$

$$5160 \text{ pounds} \times .084375 \left(8\frac{7}{16}\right) = 435.371\frac{1}{2}.$$

$$\text{First offer} \quad \$438.60$$

$$\text{Sold for} \quad 435.371\frac{1}{2}$$

$$\text{Lost} \quad \$ 3.221\frac{1}{2}$$

NOTE.—It is evident he lost $\frac{1}{16}$ cent a pound; the operation can be abbreviated by multiplying the total weight, 5160, by $\frac{1}{16}$ cents, and point off 2 decimals in the answer, as $\frac{1}{16}$ cent is expressed thus, $00\frac{1}{16}$, $5160 \times .00\frac{1}{16} = \$3.225 = 3.221\frac{1}{2}$ —equivalent to dividing by 16.

Ex. 4. Mr. James had 4 bales of cotton of 4 different grades, for which he was offered 4 different prices: 1 bale, 500 pounds, at $9\frac{1}{16}$ cents; 1 bale, 500 pounds, at 9 cents; 1 bale, 500 pounds, at $8\frac{1}{8}$ cents; 1 bale, 500 pounds, at $8\frac{7}{8}$ cents. As the cotton averaged 500 pounds to the bale, what was the average price?

$$\text{Ans. } .08967\frac{7}{8} \text{ cents.}$$

Explanation: Referring to Table 6, $9\frac{1}{16}$ cents = .090625.

$$\text{Nine and } \frac{1}{16} \text{ cents} = \$.090625$$

$$\text{Nine cents} = .09$$

$$\text{Eight and } \frac{1}{8} \text{ cents} = .089375$$

$$\text{Eight and } \frac{7}{8} \text{ cents} = .08875$$

Total

$$\$.358750$$

Add the numbers and divide by 4, as there are 4 bales, the answer will be the average price.

$$4).3587500$$

$$\text{—————} = .08967\frac{7}{8} \text{ cents.}$$

$$.0896875$$

NOTE.—Table 5 will show $\frac{7}{8}$ to be $\frac{14}{16}$; then the 4 bales will be $9\frac{1}{16}$, $9, 8\frac{15}{16}$, $8\frac{14}{16}$.

Ex. 5. Three bales of cotton weighing 521, 499 and 580 pounds were sold for $8\frac{15}{16}$ cents a pound. What was their value?

Ans. \$143.00.

Explanation: Multiply the sum of the weights by $.081\frac{5}{8} = .089375$ and point off 6 figures in the answer.

Ex. 6. A farmer sold 3 bales of cotton weighing 516, 524 and 520 pounds, at $8\frac{3}{16}$ cents a pound; 2 bales, 519 and 541 pounds, at $8\frac{1}{16}$ cents. How much money did he receive?

Ans. \$213.18 $\frac{3}{4}$.

Explanation: Add first the weights of the 3 bales and multiply by $.08\frac{3}{16}$ ($.081875$); add weights of the 2 bales and multiply by $.08\frac{1}{16}$ ($.080625$); then add the 2 answers.

Ex. 7. A list of 100 bales of cotton was sold for $\frac{3}{16}$ cents above the market; the cotton weighed 52,480 pounds. What was the gain by selling this cotton in bulk?

Ans. Gain, \$98.40.

Explanation: Multiply the whole weight, 52,480 $\times .001875$ ($\frac{3}{16}$), point off 6 decimals in the answer, the result will be the whole amount in dollars and cents.

NOTE.—It is immaterial what the price paid or what the cotton is worth; the statement is, the cotton sold for $\frac{3}{16}$ above the quoted price in the market. If the

price were 7 cents, the cotton sold for $\frac{3}{16}$ more; if 8, 9, 10 or 11 cents a pound were the market quotations, it sold for $\frac{3}{16}$ more.

Ex. 8. A buyer received a limit (price) of $10\frac{1}{2}$ cents a pound on which to buy cotton; during the day he bought 100 bales: 28 bales, 14,560 pounds, at $10\frac{3}{8}$ cents; 32 bales, 16,160 pounds, at $10\frac{1}{4}$ cents; 40 bales, 20,320 pounds, at $10\frac{7}{8}$ cents. How much money did he make on the day's business?

Ans. \$71.30.

Explanation: Find out how much the whole amount is worth at $10\frac{1}{2}$ cents. (Table 6.)

14560 pounds

16160 pounds

20320 pounds

$51040 \times 10\frac{1}{2} =$

\$5,359.20

Calculate separate amounts—take sum from first amount.

$14560 \times .10375$ ($10\frac{3}{8}$) = \$1,510.60

$16160 \times .1025$ ($10\frac{1}{4}$) = 1,656.40

$20320 \times .104375$ ($10\frac{7}{8}$) = 2,120.90 5,287.90

\$ 71.30

Ex. 9. A farmer rented land on the halves. On 50 acres he made 20 bales of cotton, which he sold at $10\frac{3}{8}$ cents a pound; the cotton averaged 500 pounds to the bale. The land owner gave his half of the seed to the tenant for hauling 10 bales to the gin and to market. The ginner charged 60 cents per hundred for ginning and gave the ginning and 3 dollars a bale for the seed in each bale of seed cotton. The farmer sold 17 bales of seed and put 1500 pounds of seed cotton in each bale and hired 14 bales picked at 70

cents a hundred. What amount of money had he left?

Ans. \$404.37½.

Explanation: Twenty bales at 500 pounds each = $500 \times 20 = 10000$ pounds.

$10000 \times 10\frac{3}{16}$ (.101875) = value of cotton \$1,018.75

Received 3 dollars a bale on 17 bales.

$17 \times 3 =$ value of seed 51.00

Receipts for cotton and seed \$1,069.75

He paid for ginning 3 bales \$ 9.00

He paid ½ the cotton, 10 bales 509.37½

He paid for picking 14 bales

1500 pounds at 70 cents, \$10.50

14 bales = $14 \times 10.50 =$ 147.00

Total paid 665.37½

Amount left \$ 404.37½

Ex. 10. The tenant (Ex. 9) owed taxes, \$6.20; a merchandise account, \$185.70; a doctor, \$15.30; a blacksmith, \$3.50; a hired man, 8 months at 15 dollars a month. What was his net gain for the year?

Ans. \$73.67½.

Explanation:

From sale of cotton and seed he had left \$404.37½

He owed taxes \$ 6.20

Store account 185.70

Doctor's bill 15.30

Blacksmith 3.50

Help 8 mos. at \$15 = $15 \times 8 =$ 120.00

Total indebtedness 330.70

After paying indebtedness, left \$ 73.67½

EXAMPLES INVOLVING THE USE OF THE
 $\frac{1}{32}$ CENT—DECIMAL EQUIVALENT
 $\$.0003125$ — $3\frac{1}{8}$ POINTS.

Ex. 1. What is the value of one bale of cotton, 534 pounds, at $7\frac{1}{32}$ cents a pound?

Ans. $\$37.54\frac{11}{16}$

NOTE.—Solve as No. 1, — $6\frac{1}{4}$ points.

$$[534 \times .07\frac{1}{32} (.0703125)] = ?$$

Ex. 2. A man sold 1 bale of cotton, 544 pounds, at $9\frac{1}{32}$; 1 bale of cotton, 528 pounds, at $8\frac{1}{32}$. What is the value of both?

Ans. $\$91.53\frac{1}{2}$.

NOTE.—Solve as No. 2, under $6\frac{1}{4}$ points.

$$544 \times .09\frac{1}{32} (.0903125) = \$49.13$$

$$528 \times .08\frac{1}{32} (.0803125) = 42.40\frac{1}{2}$$

$$\$91.53\frac{1}{2}$$

Ex. 3. Proceed as in No. 3, under $\frac{1}{16}$ at $\frac{1}{32}$ instead, and find the loss.

Ans. Loss $\$1.61\frac{1}{4}$.

NOTE.—The loss in No. 3 was $\$3.22\frac{1}{2}$; for brevity, $\frac{1}{32}$ being $\frac{1}{2}$ of $\frac{1}{16}$, then the loss here is $\frac{1}{2}$ of $\$3.22\frac{1}{2}$, which is $\$1.61\frac{1}{4}$.

Ex. 4. Johnson & Smith bought 20,560 pounds of cotton at $9\frac{1}{32}$ cents a pound and sold it for $9\frac{1}{4}$. What was their gain?

Ans. $\$44.97\frac{1}{2}$.

Explanation: By Table 5, $\frac{1}{4}$ equals $\frac{8}{32}$, then $9\frac{1}{4} = 9\frac{8}{32}$.

$$9\frac{8}{32} - 9\frac{1}{32} = \frac{7}{32} \text{ as a gain.}$$

$$20,560 \text{ pounds} \times \frac{7}{32} \text{ cents} = \$44.97\frac{1}{2}.$$

$$[20,560 \times .0021875 = (.00\frac{7}{32})] ?$$

The result is the same if the value is obtained at $9\frac{1}{4}$ cents, from which subtract the value at $9\frac{1}{2}$ cents.

$$20,560 \times .09\frac{1}{4} = \$1,901.800$$

$$20,560 \times .09\frac{1}{2} = 1,856.825$$

$$\text{Gain} \qquad \qquad \$ 44.975$$

Ex. 5. Three bales of cotton, 526, 497 and 545 pounds, respectively, were sold for $8\frac{1}{2}$ cents a pound. Find their value.

Ans. \$132.70.

Explanation: Multiply total weight by .0846875 (Table 5); count 7 figures off to decimal place.

(1568 pounds \times .0846875).

Ex. 6. A buyer bought 50 bales of cotton at $10\frac{7}{8}$ cents a pound average, held it two months and sold it for $10\frac{3}{4}$; his expenses were insurance 40 cents, weighing 10 cents, and drayage 10 cents a bale. The cotton weighed 25,600 pounds. What was the gain or loss?

Ans. Gain \$98.00.

Explanation:

(1)	$25,600 \times .10\frac{7}{8} =$	\$2,744.00
	$25,600 \times .10\frac{3}{4} =$	2,616.00

Total gain =	\$ 128.00
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The insurance, weighing and drayage cost

60 cents a bale, $50 \times 60 =$	30.00
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Net gain	\$ 98.00
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(2) $\frac{2}{3}\frac{3}{4} - \frac{7}{8} = \frac{1}{3}\frac{6}{8}$.

$\frac{1}{3}\frac{6}{8} = \frac{1}{2}$.

(The $\frac{2}{3}\frac{3}{4}$ are $\frac{2}{3}\frac{3}{4}$ of a cent.)

$\frac{1}{3}\frac{6}{8} = \frac{1}{2}$ of a cent = .005.

$25,600 \times .005 = \$128.00$.

Ex. 7. A farmer sold 35 bales of cotton to a buyer for $8\frac{1}{2}$ cents a pound, to be delivered in 5 days, during this time, before delivery, the market declined $\frac{5}{8}$ cents a pound. The buyer offered 40 dollars to the farmer to cancel the sale; the cotton weighed 18,550 pounds. What would the buyer have saved or lost had the farmer accepted the 40 dollars?

Ans. Saved $\$11.01\frac{9}{16}$

Explanation: $8\frac{1}{2}$ cents $= 8\frac{1}{2}$.

$$(1) \quad 8\frac{1}{2} - \frac{5}{8} = 8\frac{1}{4}.$$

$$18,550 \times 8\frac{1}{2} (.085) = \$1,576.75$$

$$18,550 \times 8\frac{1}{4} (.0834375) = 1,547.76\frac{9}{16}$$

	<u>\$ 28.98\frac{7}{16}</u>
Buyer offered	\$40.00
Actual difference	<u>28.98\frac{7}{16}</u>

$$\underline{\$11.01\frac{9}{16}}$$

(2) Multiply weight by price of decline, $\frac{5}{8}$.

$$18,550 \times .00\frac{5}{8} (.0015625) = 28.984375 = 28.98\frac{7}{16}$$

Ex. 8. John Patton was offered ten-thirty-seven and one-half ($10.37\frac{1}{2}$) for his 8 bales of cotton, by one buyer, and ten and twelve thirty-seconds ($10\frac{1}{3}$) by another; which offered the best price and what would he have gained or lost by selling to the first buyer?

Answer. Neither. Nothing.

NOTE.—See Tables 5 and 6 for $\frac{3}{8}$, $\frac{1}{3}$ and $.0037\frac{1}{2}$.

Ex. 9. Thompson & Brown shipped 100 bales of cotton to New Orleans, the returns from the sale of which showed a loss in weight equivalent to $\frac{1}{3}$ in price. The cotton weighed 52,800 pounds. What was the money loss?

Ans. \$16.50.

Explanation: It is evident the loss being $\frac{1}{32}$ equivalent to $3\frac{1}{8}$ points, the total weight should be multiplied by the price.

$$52,800 \text{ pounds} \times .00\frac{1}{32} = \$16.50.$$

$52,800 \times 3\frac{1}{8}$ will give same results, but as it takes 4 figures to make the number of points, the common fraction being used in place of the completed decimal, four figures must be counted off to give the number of cents and parts of a cent.

Ex. 10. Ayres & Co., shipped 60 bales of cotton to Savannah, which lost $2\frac{3}{8}$ pounds, average, to the bale and $\frac{3}{32}$ valuation in classification. They paid for 30,592 pounds at $8\frac{1}{2}$ cents a pound and sold it delivered in Savannah at $9\frac{9}{32}$. The freight rate was 30 cents a hundred and commission 1 dollar a bale. What was the gain or loss on this shipment?

Ans. Gain, \$13.25 $\frac{1}{2}$.

Explanation: Find total loss in weight, subtract this from original weight; find value of net weight at $9\frac{9}{32}$, and from this deduct the sum of the expenses, loss in value, and first cost.

$$60 \text{ bales} \times 2\frac{3}{8} \text{ pounds} = 160 \text{ pounds.}$$

$$30592 \text{ less } 160 = 30,432 \text{ pounds.}$$

$$30,432 \times .09\frac{9}{32} (.0928125) = \quad \quad \quad \$2,824.470$$

$$8\frac{1}{2} \text{ cents} = 860 = .0860$$

$$30,592 \times .0860 = \text{first cost} = \quad \$2,630.912$$

$$30,592 \times 30 = \text{freight cost} = \quad 91.776$$

$$60 \times \$1.00 = \text{commission} = \quad 60.000$$

$$30,432 \times \frac{3}{32} (.0009375) \text{ loss in class} \quad \quad \quad 28.530$$

Total cost, delivered	2,811.218
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Net gain	\$ 13.252
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NOTE.—To get the true result in multiplying 30,592 \times 30, 30,592 should first be divided by 100, as freight rate is 30 cents per hundred pounds, and the quotient multiplied by 30.

Freight rates are calculated on the weights shown at shipping point, but the weights are generally verified at destination and if found incorrect, the charges are calculated on the corrected weights.

The loss of $\frac{3}{32}$ in classification is here calculated on destination weights, as they are the weights governing the settlement.

CHAPTER VI.

BASIC COTTON CALCULATIONS.

Many expressions and abbreviations peculiar to the cotton trade are used, and as such will enter largely into the statement of problems in this volume, their introduction here may not be inappropriate.

It is suggested that the reader familiarize himself with them in order to appreciate and understand their meaning and value.

The terms are expressive to those familiar to the cotton trade, but to those who are not they will prove instructive.

ABBREVIATIONS.

B/L—Bill of lading.

B/C—Bales of cotton.

M/B—Middling basis.

B/M—Basis middling.

(B/M and M/B have the same meaning.)

C. A. F.—Cash and freight.

F. O. B. or fob—Free on board.

Cwt.—Hundred weight.

Lbs.—Pounds.

TERMS.

Long.—Long cotton signifies the amount of cotton one has in his immediate possession. If Jones has 100 B/C on hand, he is “long” 100 bales.

Spot Cotton or *Spots.*—Denote about the same thing as “long”; in the preceding, Jones is “long” 100

bales, that is, he has 100 bales of "spot cotton" in his possession.

Short, Short Cotton, Shorts.—This term implies that the seller of cotton has sold it before getting it in his possession, and has "sold short" or "sold the market short."

Short sellers make their money by a decline in the market.

Those dealing on the "short side," who sell cotton they do not own, are called "shorts."

Short sellers sometimes find the market does not decline as anticipated, but instead either remains the same or advances, if so, in the former case they make no gain, in the latter they suffer a loss.

Short sellers make money by the market declining, and lose when it *advances*.

Bear, Bears.—Those who sell "short," desire, and exert an effort to make the market decline, in so doing their exertions are to bear (press) it down, hence the term "bear." Those operating on the short side of the market—those who try to press the price down—are designated as "Bears."

Bull, Bulls.—A class of dealers whose operations are exactly opposite to those of a "bear." A dealer possessing spot cotton, or contracts, which he has bought at a price he thinks cheap, wishes an advance, exerts his influence to secure it, which action is to lift up (bull) the price, hence the name "Bull."

Those operating on the bull side—those trying to advance the price of cotton—are termed "Bulls."

Bulls make money by the market advancing; lose it on *declines*.

Bulls selling cotton at prices satisfactory to them-

selves, after so doing and wishing to buy again, desire to buy at a cheaper basis if possible, in such instances they become bears, and vice versa.

Briefly, bears are those who want and try to make the market go down; bulls are those who want and try to make the market go up.

Point.—One one-hundredth ($\frac{1}{100}$) of a cent.

Market Opens.—The first figures that are chalked (put in figures on a blackboard) in the Cotton Exchanges at beginning of the day's business.

Market Closes.—The last figures that are placed on the boards in the Exchanges for the day's official quotations.

Futures, Future Sales.—Contracting to sell cotton to be delivered at some future time. The term is applied to deals in which *contracts* are dealt in, instead of actual cotton. Contracts are dealt in as one would deal in stocks, bonds, notes, mortgages, etc., with the exception, that contracts bought or sold through the Cotton Exchanges are often settled for by the contracting parties paying a margin to settle the contract. No indorsement for transference is necessary.

Sales or purchase of contracts for future delivery are dealt in only by the New York and New Orleans Cotton Exchanges, but contracts for either the sale or purchase of spot cotton are often made between parties, none of whom are members of any exchange, and such contracts are not subject to any exchange rule. The governing features of such transactions are the mutual agreements of the contracting parties.

Contracts, Agreements.—Agreement between two or more parties to perform certain stipulated acts.

As reference to dealings in cotton, they may be

two-fold; they may refer to deals between individuals or corporations who execute contracts to sell and deliver, and buy and receive cotton, one from the other; they may have reference to Cotton Exchange contracts which are dealt in as commodities, and cotton may or may not be used as basis of settlement, but if not, liquidated by payment of margins.

Margins.—(1) Payments required to make purchase of contracts, to maintain them after purchase, or to satisfy their requirements at or before maturity. (2) The difference between the price paid and received for cotton. If cotton be bought for $8\frac{1}{2}$ cents and sold for 8, the marginal difference is one-half cent loss; if bought for 8 cents and sold for $8\frac{1}{2}$, the gain is $\frac{1}{2}$ cent margin. (3) The difference between the price of spot cotton and that of futures.

Violent fluctuations sometimes occur in the markets, when so, it is not unusual for brokers to demand the payment of \$5.00 margin per bale or more, as a protection to themselves against loss. In the ordinary course of events, the usual margin demanded is \$1.00 per bale. Both parties to a marginal contract reserve the right to call for a margin.

If Jones buys 100 bales of August futures and the market advances 20 points, he may call for this advance, equivalent to 100 dollars profit to himself, surrender his contract and the transaction is settled; should the market decline 20 points (100 dollars) he will be called upon to re-margin (pay another hundred dollars), if not paid his contract is canceled and the broker keeps the 100 dollars first paid.

Premiums.—(1) The profit offered by a buyer to a seller as an inducement to secure a lot of cotton.

If the basis price of middling cotton is 10 cents, and a cotton merchant has 500 bales for sale of even running grades, a buyer might offer a premium of $\frac{3}{16}$ or $\frac{1}{4}$ *above*, that is to say, $10\frac{3}{16}$ or $10\frac{1}{4}$ for such a list of cotton. (2) The grades of cotton recognized as better in quality than middling, have values higher than such a grade and these values above middling are known as premium values.

Discounts.—(1) The difference between the price of spots and futures. If the price of spot cotton in New York is 9.65, in March, and the quotations for May cotton is 9.33 then the *discount* of the May option under March spots is 32 points. (2) Middling being the basis, the grades under it are more inferior in quality with a corresponding depreciation in value, these differences for the comparative lower grades are the *discounts* for such character of cotton off the middling value. (3) Cotton merchants selling cotton for future delivery, in some instances protect the sale by buying futures for the same number of bales.

If Anderson & Smith sell 5,000 bales of cotton in August to be delivered in September, October and November, at 10 cents at the ship's side in New Orleans, if at the time of this sale August cotton is worth 9.80 as the publicly quoted value, and October is quoted at 9.50,* the merchant's sale is made at a *premium* of 20 points, and he buys 5,000 Octobers at 9.50, he gets them at 50 points *discount* from price of the sale.

In this sale Anderson & Smith have "sold short"

*Owing to heavy freights, marine insurance, exchange, etc., sales are effected at 60, 90, or, perhaps, 120 points. on some future month.

5,000 bales—have sold 5,000 bales when perhaps they did not have one, and at a time, perhaps, when the cotton could not be bought in their territory—and as they did not know what the price of cotton would be in the delivery months, they sought to hedge themselves and secure protection by buying contracts from some member of the New Orleans Cotton Exchange, maturing in the months for delivery.

Parity, Equal Values.—If middling cotton is quoted in New Orleans at 9.80 for spots, and 30 points were necessary as a freight charge to put it in New York, 30 added to 9.80 would give par value in New York as 10.10.

If March cotton is quoted at 9.75, and May futures at 9.60, the difference in *parity* existing between the two months, is 15 points.

If March cotton is quoted at 9.75 in the month of March, and middling spots for the same month at 9.85, the difference in parity for spots and futures for the same month is 10 points.

Hedge, Hedging.—To protect one's purchase or sale of cotton; to accomplish which, requires the necessity of resorting to the New York or New Orleans Cotton Exchanges (in America) securing from the one or the other a contract for some designated future month, covering the same number of bales in the contract as represent the number of bales of spot cotton. A contract bought in one month may be hedged (protected) by selling a contract in another month, one to entirely offset the other must be of like character and equivalent value, that is to say, if the first contract bought stipulates 100 bales of May cotton, the same may be hedged by selling 100 bales of July;

were a loss to occur on the May contract, an equal gain should accrue on the July sale.*

Straddles or Spreads.—Mean the purchase and sale of one month against another in any of the New Orleans, New York or Liverpool markets.**

Scalpers.—Those who mediate between sellers and buyers and act in the capacity of both buyers and sellers themselves, but not recognized as regular dealers who cater to the trade.

Splits.—Those grades of cotton that can not be classed as full types of half grades (stricts), and known to the trade as *quarter grades*, designated by the exchanges as “fully” and “barely.”

A good style of low middling cotton, not sufficient in character to be classed as strict low middling, would be known as fully low middling.

Some buyers of spot cotton, and since the first of January, 1908, the New York Cotton Exchange, do not recognize these grades.

Flat Cotton.—The original bale of cotton as it comes from the press before compressing. Transportation companies prefer for economic reasons, to handle cotton in compressed form and have it compressed at their expense, if not otherwise instructed. Conditions sometimes require that cotton be shipped “flat” (without compressing), and if so, the words “To be shipped flat” or “Ship flat” must be so expressed in the Bill of Lading.

Shippers Order, Notify.—These words must be on the face of a B/L where the shipper desires to draw

*See Discounts, Anderson & Smith, p. 196.

**See Hedging, sale and purchase of contracts.

through his local bank for the full or part value of his cotton before it reaches destination. If so worded, the shipper has a legal advantage, and the bank can protect itself. The local bank, with the B/L, Sight Draft and Invoice, forwards them to some bank at point of destination of shipment, with instructions to deliver the B/L to consignee (the party to whom the cotton is shipped), when the consignee pays the money to the bank for the cotton at destination, the bank in turn surrenders the B/L to the consignee and *notifies* the transportation company—this being the order of the shipper. The shipper must indorse on the back of the B/L the name of the shipper. If Williams & Smith are the shippers, their names must appear on the B/L; if the shipper is an individual, then his name. The B/L is indorsed over to the bank making the collection, as one would indorse a note or bank check to another. This authorizes the bank to make the collection.

The bank at destination collects the money from the consignee and surrenders to him the B/L, and forwards the money to the bank which took care of the shipment, which money is credited to the individual or firm making the sale of cotton.

Where cotton merchants or factors as consignees are known to be men of undoubted financial ability, it is not unusual for banks to allow credit to the cotton shipper for the amount of the draft on the cotton, after the B/L is properly signed by the railroad agent and indorsed by the shipper, before collecting the money from the consignee.

If J. H. Hicks ships 50 B/C from Talledega, Ala.,

to W. B. Thompson & Co., New Orleans, La., drawing through the local bank at Talladega for \$2,500, this being the value of the cotton at time of shipment, and allow Mr. Hicks credit for the full amount of the draft. The bank allowing this credit to Mr. Hicks is equivalent to Mr. Hick's putting \$2,500 in the bank in cash instead of the draft.

This is supposing the Talladega bank recognizes W. B. Thompson & Co. as perfectly reliable, otherwise the draft would be received for collection only and Mr. Hicks would be given credit for it when collected.

Factors, Cotton Factors.—Those interested in the cotton trade who do not buy cotton direct, but instead, receive from and sell for others, who consign cotton to them to be sold. As commission merchants, they usually make a charge for their services based on a small percentage of the amount of business handled.

Broker, Brokerage.—Dealers buying and selling cotton, or dealing in contracts, for account of others, are termed Brokers. A charge for both buying and selling is usually made when the transactions are completed, based on a certain per cent of the value of the property. Brokers of the New York and New Orleans Cotton Exchanges make a minimum charge of seven dollars and fifty cents, for buying, and the same charge for selling, each 100 bales, that is, fifteen dollars for the "round turn." This amount of commission applies on business done for those who are not members of the exchanges, that is to say, "outside business." A commission of half this amount is

charged for one member acting in capacity of broker for another.*

The brokerage on deals consummated through the medium of the Exchange, applies to transactions affecting the sale or purchase of *contracts* specifying not less than 100 bales of cotton.

Some members deal only in contract cotton, others in spots, and still others in both futures and spot cotton. The commission, based on percentage, is called *brokerage*.

Reclamations.—Claims made for shortage in weight, class, or deviation in cotton from sample. Should a shipment of cotton prove at destination to be short in weight 100 pounds, and had the consignee paid full value for the shipment, on receipt of the invoice and B/L before its arrival, it is clear that he would have paid for 100 pounds too much, in such case he would *reclaim* from the shipper the value of the 100 pounds. Equally so, when the classification on the out-turn shows not to be as high as stated in the invoice, or if cotton be bought on sample, and it shows on arrival not to come up fully to the sample in quality, then in both instances *reclamations* would be made on the seller for the value of differences in class and variation in the cotton from the sample.

Invoice.—The bill or statement that describes in detail the shipment of cotton; generally sent through the mail with the draft and B/L, and precedes the arrival of the cotton. It shows its date, number and weight of each bale, total weight of all, sometimes its classification, and full value when payment is re-

*Members often operate for one another without charge.

requested before the arrival of the cotton at destination.

Draft.—An order from one person on another for the payment of money—a bill of exchange. Such orders or drafts are usually handled through the banks. The seller of the cotton after making up his invoice, will make out his draft for the amount of it, place it in the hands of his local banker with instruction to collect for the full value, or in some instances, a part of it. It is sometimes written payable “at sight,” that is, payable when presented, or at 20, 30, or 60 days sight. Drafts in payment for domestic cotton are usually payable at sight, while those drawn covering cotton for export, stipulate 60, 90, and in some instances, 120 days or more.

Exporters making drafts on their cotton on which payment will be made in 60 or 90 days, often avail the cash on them through their local or some other bank by selling exchange to cover their shipment. Some banks make a specialty of dealing in exchange on foreign commercial financial centers.

Bill of Lading.—Virtually a receipt from a transportation company acknowledging the receipt of something to be shipped. It describes the character of the shipment, condition, date received, from and to whom shipped, holding the company responsible to deliver at destination, barring certain contingencies, in like order received. All Bills of Lading are signed by the company's lawful agents, and are usually made out in triplicate form. One copy (the original) for the shipper, one to be filed in the company's office as its record, and one copy to the freight car conductor, if the shipment is made via a railway company.

The customary procedure in preparing the papers for a cotton shipment from initial points is: Make up the invoice, draw a draft (as one would write a bank check), have the railroad agent sign his name to the B/L, for his company, which he does after the cotton is on the railway platform, or in possession of the company, when he will give to the shipper the *original*; with these three papers—invoice, sight draft, and B/L—the shipper presents them to the bank with instructions how to handle the shipment, the bank in turn, writes a letter to some bank or banker, at or near the point of destination of the shipment, to this letter he pins all three papers, and forwards in one envelope. Upon receipt of the papers the receiving bank has full instructions how to proceed. Ordinarily it presents the draft, with the other papers to the consignee, collects the money, surrenders all papers, and returns the money to the bank at shipment point.

Shippers often send invoice direct to the buyers, reserving only the draft and B/L to go through the banks.

For such character of business, banks make a small charge to compensate them for their services, usually calculated as a percentage on the amount involved, the rate usually being determined by the demand for exchange.

Through Bill of Lading.—To facilitate the operation of handling cotton from loading point to destination, the *Through Bill of Lading* was devised.

Large railroad interests combining into systems, these in turn effecting transportation arrangements with steamship companies, constructed a through bill

of lading recognized by all concerned in International traffic.

Such transportation receipts covering shipments for foreign account, usually read to "shipper's order" or to the order of some person who must indorse the bill of lading, so that it becomes at once a negotiable draft.

Under its reading shipments can be made direct from interior points in the South to foreign ports, no longer necessitating rebilling at the ports receiving the export shipment.

Port Bills of Lading.—Shipments of cotton for German destination are sometimes protected by Port Bills of Lading in the absence of Through Bills of Lading.

By means of such Bills the whole shipment is receipted for, yet it may go out by several vessels, and when so billed, "is classed or arbitrated, and invoiced separately."

Shipments originating at interior American towns, moving on one Through Bill of Lading, arriving in several vessels, are treated as "forming one shipment."

Arbitrators, Arbitration.—Parties designated by two or more in controversy, as mediators to amicably adjust their alleged differences regarding the character of cotton delivered on contract. *Arbitration*, the hearing and determining of a cause by parties in controversy, by a person or persons chosen for the purpose.

The Arbitration Committee of the New Orleans Cotton Exchange is composed of nine members appointed

annually by the Board of Directors. Its duties are to hear claims of members against each other, concerning transactions in "spot, future contracts and free on board cotton." This committee has the settlement of all such claims, except those in which the question of classification of cotton is involved, in which case the matter is determined "by a committee or committees of experts." N. O. Cotton Exchange arbitrators are allowed a fee of \$5 for the adjustment of each case. The Arbitration Committee of the New York Cotton Exchange is composed of seven members, whose offices and functions are similar to the New Orleans Arbitration Committee. Its committee is paid a like fee as that allowed to the New Orleans members. These committees adjust differences concerning cotton delivered on Exchange contract.

Dealers handling spot cotton often settle their own controversies by the selection of their own arbitrators, through mutual agreement, and whose determination in the matter is final; such arbitrators are not amenable to the rules of any exchange.

REQUISITES FOR CALCULATIONS.

In figuring cotton on basic classification it is necessary to know the different grades of cotton, also the letters, figures and characters representing those grades.

Having learned in previous articles the value of the cent, half cent, points, etc., the following problems are stated and solved on the assumption that the student is conversant with their full meaning, and is

prepared to accept shorter methods of cotton calculations.

For clearness, the grades are again given with their corresponding numbers, letters and characters.

The Cotton Exchanges now recognizing eighteen grades of cotton, these numbers and more will be used in this work.

It is immaterial the number of grades to be considered, as the *principle* for calculating any number of them is the same.

For practical purposes, it is thought advisable to make calculations in which a larger number of grades are shown.

Any one who has mastered the theory and principle of solving any number of grades, can readily calculate the 9 grades to be established by the United States government as its standard types.

GRADES, CHARACTERS AND INITIALS.

The following grades will be used for the purpose of calculation :

Character and Number.	Grade Name.	Initials.
a	Fair	F.
b	Strict middling fair	S. M. F.
c	Middling fair	M. F.
d	Strict good middling	S. G. M.
1	Good middling	G. M.
2	Strict middling	S. M.
3	Middling	M.
4	Strict low middling	S. L. M.
5	Low middling	L. M.
6	Strict good ordinary	S. G. O.
7	Good ordinary	G. O.
8	Strict low ordinary	S. L. O.
9	Low ordinary	L. O.
d-t	Strict good middling tinged.	S. G. M. T.
1-t	Good middling tinged.	G. M. T.
2-t	Strict middling tinged.	S. M. T.
3-t	Middling tinged.	M. T.
4-t	Strict low middling tinged.	S. L. M. T.
5-t	Low middling tinged.	L. M. T.
3-s	Middling stained.	M. S.

The characters here used to represent the different grades are adopted for sake of convenience. Buyers do not all use the same symbols to indicate the grades—some use numbers, some letters, some characters of their own devising, but all are used for brevity in correspondence, making calculations, etc.

All basic calculations require the use of the M. grade as the base.

All grades showing a better class than M. receive

premium or better prices, and the premiums are said to be so much "on" M.; and those grades inferior to M., bear discounts from the M. price and at different discounts as so much "off."

The grade, good middling tinged (G. M. T.) has ordinarily, the same value as M. white cotton, and is so recognized in this work.

There being no definite difference to be taken off M. cotton for tinges and stains, these differences being governed in the main by the determination of the buyer of spot cotton; values of differences for these colored cottons will be calculated at a stated value in problems showing such character of cotton.

A large percentage of arithmetical problems are solved by the unit or analytical method; by tenths, or decimal plan; by the 100 or percentage manner or by twelfths or duodecimal way.

In making cotton calculations the sixteenth or $6\frac{1}{4}$ point method is used in this work, and should be thoroughly mastered, as fully 90 per cent of all cotton calculations requiring the average grade are determined in this way.

Cotton quotations and prices being often in eighths, quarters and halves represented as multiples of the $\frac{1}{16}$ basis, regardless as to whether the grades to be calculated are above or below M.

TO FIND THE TOTAL VALUE OF COTTON WHEN DIFFERENT PRICES FOR DIFFERENT GRADES ARE GIVEN.

For convenience take the five grades:

- (1) G. M., (2) St. M., (3) M., (4) St. L. M., (5)
L. M.

If the price of each grade is known, and the weight corresponding to the price, it is very easy to ascertain its value, by multiplying the price by the weight; if several weights, the value of each will be calculated separately, and these different amounts added, the sum of which shows the total value; from this procedure the following rule is adduced.

RULE I.—*Multiply the weights of the cotton of the different grades, by the price of these respective grades, and add the products of these different multiplications, the sum of which will be the total value.*

NOTE.—*To accelerate the work it is frequently easier to perform the multiplication by multiplying weight by price.*

PROBLEMS.

Ex. 1. Find the value of 1 M. B/C 520 lbs. weight at 10 cents a lb.

Ans. \$52.00.

Ex. 2. A farmer sold 2 B/C which classed M. and S. M.; for the M. he received 10 and for the other $10\frac{1}{4}$ cents a pound; what is the value of both, if the M. weighed 500 and the other 520 pounds?

Ans. \$103.30.

NOTE.—Apply the rule.

Explanation:

$$500 \times 10c = \$ 50.00$$

$$520 \times 10\frac{1}{4}c = 53.30$$

$$\text{Total value} = \$103.30$$

NOTE.—Should any difficulty arise as to multiplying by the $\frac{1}{4}$, change it to a decimal, .25, and multiply

the 520 lbs. by .1025 and point off 4 decimals in the answer.

Ex. 3. Johnson sold 3 B/C; 1 M. 548 lbs. at 10 cents, 1 St. L. M. 520 lbs. at $9\frac{3}{4}$ cents, 1 L. M. 580 lbs. at 9 cents. What is their total value?

Ans. \$157.70.

NOTE.—The $\frac{3}{4}$ cents are equal to 75 points:

Decimal equivalent	\$.0075
Nine cents equal	.09

Then nine and $\frac{3}{4}$ cents = \$.0975

Multiply \$.0975 \times 520 = value of this bale.

Ex. 4. Find the value of 7 G. M. B/C 3620 lbs. at $10\frac{1}{2}$, 5 S. M. B/C 2600 lbs. at $10\frac{1}{4}$, 4 M. B/C 2250 lbs. at 10, 3 S. L. M. B/C 1650 lbs. at $9\frac{3}{4}$, 1 L. M. B/C 560 lbs. at 9.

Ans. \$922.00.

Suggestion.—If preferred, convert the fractions $\frac{1}{4}$, $\frac{1}{2}$, and $\frac{3}{4}$ into decimals equalling .0025, .0050, .0075, that is, 25, 50, and 75 points, and when so used, point off 4 decimals in the answer, otherwise only 2.

Ex. 5. Tom Smith had his cotton graded by 2 cotton buyers, one said it was a S. M. and G. M.; the other said 2 S. M. He sold to the first buyer who allowed $\frac{1}{4}$ on S. M. for G. M. The weight of the S. M. was 560, the other 580 pounds. What did he gain by selling to the first buyer?

Ans. Gain, \$1.45.

NOTE.—(1) It makes no difference in this problem what the basic price is, for the G. M. was $\frac{1}{4}$ above that of S. M.—assuming, however, that M. was $9\frac{3}{4}$, S. M. 10, then G. M. was $10\frac{1}{4}$.

Explanation:

$$(1) \quad 580 \times 10\frac{1}{4} = (\text{G. M.}) \quad \$ 59.45$$

$$560 \times 10 = (\text{S. M.}) \quad 56.00$$

Total value of the first offer \$115.45

$$580 \times 10 = \$ 58.00$$

$$560 \times 10 = 56.00$$

Total value of second offer \$114.00

Gain by selling to first classer \$ 1.45

$$(2) \quad 580 \times \frac{1}{4} (.0025) = \$1.45.$$

NOTE.—(2) The gain was on 1 bale only. To multiply the $\frac{1}{4}$ (difference in price) by the weight gives the gain on 1 bale.

Ex. 6. What is the difference in value between 4 B/C, 2640 pounds at $8\frac{1}{4}$ and $8\frac{5}{16}$ cents a pound?

Ans. \$1.65.

Ex. 7. Mr. Williams noted that quotations for L. M. cotton were $\frac{3}{4}$ off M., but when he offered his 12 bales, the buyer stated the difference was $1\frac{1}{4}$ off; what did Mr. Williams lose by reason of this change in low grade differences? His cotton weighed 6,480 pounds.

Ans. Lost \$32.40.

Explanation:

$$1\frac{1}{4} \text{ off equals } 125 \text{ points}$$

$$\frac{3}{4} \text{ off equals } 75 \text{ points}$$

Difference 50

50 points equal $\frac{1}{2}$ cent.

6,480 pounds at $\frac{1}{2}$ cent a pound = \$32.40.

Ex. 8. A grower knowing the price of cotton to be $8\frac{1}{2}$ cents M/B, took 15 bales to market, but before arriving the market declined 12 points. The cotton weighed 7,860 pounds; what was his loss on the decline?

Ans. Lost \$9.43+.

Explanation:

(1) The $8\frac{1}{2}$ cents = \$.0850

The 12 cents = \$.0012

The price now = \$.0838 = (eight thirty-eight)

Find value at $8\frac{1}{2}$.

Find value at 8.38.

The difference will be the loss.

(2) Find weight of each bale.

Multiply its weight by the 12 points, this equals loss on each bale.

Multiply this loss by the number of bales, the product will be the total loss.

Ex. 9. Had the market advanced 20 points, what would have been the gain to the grower in Ex. 8?

Ans. \$15.72.

Ex. 10. Find value of 2 G. M. B/C 1160 pounds at $9.87\frac{1}{2}$, 3 S. M. B/C 1648 pounds at $9.62\frac{1}{2}$, 5 M. B/C 2824 pounds at $9\frac{3}{8}$, 2 L. M. B/C 1000 pounds at $8\frac{5}{8}$.

Ans. \$624.17.

NOTE.—The $87\frac{1}{2}$ and $62\frac{1}{2}$ are $\frac{7}{8}$ and $\frac{5}{8}$ respectively; the four different prices are then, $9\frac{7}{8}$, $9\frac{5}{8}$, $9\frac{3}{8}$, and $8\frac{5}{8}$. See table for eighths and points.

Ex. 11. What can I get for 5 B/C, weights being 522, 518, 547, 560 and 503 lbs. each, if price is $7\frac{3}{4}$ cents?

Ans. \$196.10.

NOTE.—One-fifth of a cent equals 2 mills equals 20 points; two-fifths equals twice one-fifth equals 4 mills equals 40 points. Decimally, then, the price is 7.40 (seven forty).

Ex. 12. I have 1 G. M. B/C, 580 pounds, and, 1 L. M. 580 pounds. The G. M. is worth $8\frac{1}{2}$ and the L. M. $7\frac{1}{4}$; what is the difference in the value of the 2 bales?

Ans. \$7.25.

Ex. 13. I had 1 B/C, G. M., weight 560, picked before a rain and "ginned dry"; another S. L. M., 552, "picked and ginned damp"; the former worth 7.80, the latter 7.05; what did I lose by not waiting for the second bale to dry?

Ans. \$4.66+.

Ex. 14. A cotton merchant bought 100 B/C after nightfall by telephone; when the market came in next day it was up 15 points; what was the merchant's gain on each 500 pounds B/C?

Ans. 75 cents.

Ex. 15. If this lot of cotton averaged 520 lbs. to the bale, what was the merchant's gain on the transaction?

Ans. \$78.00.

Explanation:

1 bale 520 lbs. \times 15 points ($= \$.0015$) = 78 cents.

If gain on 1 bale is 78 cents 100 bales are 100×78 cents = \$78.00.

Ex. 16. M. cotton being worth $7\frac{5}{8}$, what can I get for 1 G. M. T., 560 lbs., and 1 G. O., 540 lbs., with 250 off for the G. O.?

Ans. \$70.35 $\frac{1}{2}$.

Statement.—G. M. T. being M. value $=7\frac{5}{8}=$
\$.07625=

.07625—250 points $=.05125=(5\frac{1}{8})$.

$560 \times 7\frac{5}{8} =$ value G. M. T.

$540 \times 5\frac{1}{8} =$ value G. O.

Note.—\$.07625=cents, $7\frac{5}{8}$

Less .0250 points

Leave .05125 $=5\frac{1}{8}$ cents. (See Table points and eighths.)

TO FIND THE AVERAGE PRICE WHEN THE DIFFERENT PRICES AND GRADES ARE GIVEN, AND WEIGHTS OF THE BALES THE SAME.

It is not unusual for buyers in making bids on cotton to say, "I'll give you so and so all round for this lot of cotton."

If the seller can ascertain the grades of his cotton, how much "on" and "off" for the different grades, and knows how to calculate the averages, he can readily know when the buyer is making an offer of full value for it.

PROBLEMS—FIRST PROCESS.

Ex. 1. Smith had 2 B/C weighing 500 lbs. each; for the S. M. he was offered $10\frac{1}{4}$ and for the M. 10 cents a pound; what was the average price?

Ans. $10\frac{1}{8}$ cents.

Explanation: Where the weights of the bales are the same, the average is readily found by adding the different prices and dividing by the number of bales; thus:

1 bale at $10\frac{1}{4}$ + 1 bale at 10 = 2 bales at $20\frac{1}{4}$.

Operation: $20\frac{1}{4} \div 2 =$

$$\begin{array}{r} 2)20\frac{1}{4} \\ \hline \end{array}$$

$10\frac{1}{8}$ average.

From the explanation, we can easily form a rule.

RULE 2.—*Where the weights of the bales are the same, add the different prices for the different grades, and divide by the number of bales, the result will be the average price.* (First process.)

Ex. 2. Find average price of 4 B/C.

1 G. M. at $8\frac{3}{4}$ cents = \$.087500, 500 lbs.

1 S. M. at $8\frac{1}{2}$ cents = .085000, 500 lbs.

1 M. at $8\frac{1}{4}$ cents = .082500, 500 lbs.

1 S. L. M. at $7\frac{1}{8}$ cents = .079375, 500 lbs.

$$\begin{array}{r} \hline 4 \qquad \qquad \qquad \$.334375 \\ \hline \end{array}$$

By the rule divide .334375 by 4 =

$$\begin{array}{r} 4).334375 \\ \hline \end{array}$$

.083593+

As the division will not be exact, for practical purposes, the average price may be stated as .0836+ (eight thirty-six) [8.36]; the 93 at end of the division being so near 100, it is taken as 1 to be added to the 5,—this 93 representing only the ninety-three millionth of a dollar.

Ex. 3. Find the average price of 4 B/C; 1 G. M., 1 S. M., 1 M., 1 L. M. the weights of the bales being 400 lbs. each. M. 10, S. M. $10\frac{1}{4}$, G. M. $10\frac{1}{2}$, L. M. $9\frac{1}{4}$ cents.

Explanation :

$$\begin{array}{r}
 1 \text{ bale } 10\frac{1}{4} = .1025 \\
 1 \text{ bale } 10\frac{1}{2} = .105 \\
 1 \text{ bale } 10 = .10 \\
 1 \text{ bale } 9\frac{1}{4} = .0925 \\
 \hline
 4 \qquad \qquad \qquad .4000 \\
 4) .4000 \\
 \hline
 .1000
 \end{array}$$

By the rule the average price is 10 cents.

To find the average price in the examples under this rule, the weights of the bales are of no importance, unless exactly similar.

Prove the correctness of the average by solving

Ex. 4. What will be the value of 4 B/C; 1 bale, 400 pounds, at $.10\frac{1}{2}$; 1 bale, 400 pounds, at $.10\frac{1}{4}$; 1 bale, 400 pounds, at $.10$; 1 bale, 400 pounds, at $.09\frac{1}{4}$?

Ans. \$160.00.

Explanation :

$$\begin{array}{r}
 400 \text{ lbs. at } .10\frac{1}{2} = \$ 42.00 \\
 400 \text{ lbs. at } .10\frac{1}{4} = 41.00 \\
 400 \text{ lbs. at } .10 = 40.00 \\
 400 \text{ lbs. at } .09\frac{1}{4} = 37.00 \\
 \hline
 1600 \text{ lbs. at } = \$160.00
 \end{array}$$

1600 lbs. at 10c average = \$160.00; proof.

TO FIND THE AVERAGE PRICE, WHEN THE
WEIGHTS AND PRICES OF THE
BALES ARE DIFFERENT, AND
BOTH WEIGHTS AND
GRADES ARE GIVEN.

It is so unusual for the weights of the bales to be the same that different calculations from the preceding must be had to ascertain an average price where different.

PROBLEMS—SECOND PROCESS.

RULE 3.—Arrange the bales, grades, weights and prices in columns; placing bales under bales, grades under grades, weights under weights, prices under prices. Find the value of the different grades separately by multiplying the weight of each grade by its price, and place the amount opposite its grade, which will form a column for the values of the different grades. Add these values, divide the sum by the total number of pounds, the quotient will be the average price.

NOTE.—Where the M. price only is given, with the statement that so many sixteenths, eighths or quarters are added as premiums on the better grades and similar relative differences or discounts off for the inferior ones, find the value of each grade by adding the premiums for the different grades to M. price and deducting the discounts from it.

After ascertaining the grade price, proceed as stated in the rule.

When the totals of all the values show dollars and cents, reduce them to cents by multiplying by 100,

the number of cents in a dollar, the product will be in cents.

The result of the operation of rule 2 (second process), is absolutely correct.

Ex. 1. Let it be required to find the average price 1 M. and 1 S. M. bale of cotton, of 520 and 560 pounds each. M. is worth 10 and S. M. $10\frac{1}{4}$ cents a pound.

Explanation :

Price

1 bale 560 pounds at $10\frac{1}{4}$ = \$57.40

1 bale 520 pounds at 10 = 52.00

Total weights 1080 Total value \$109.40

$109.40 \times 100 = 10940$ cents. Divide the cents by the weight, 1080 pounds.

$109.40 \div 1080 = 1012\frac{2}{3}\frac{6}{7}$ cents as average price.

NOTE.—To prove this work, multiply the weight (1080 lbs.) by the price ($1012\frac{2}{3}\frac{6}{7}$ cts.).

It would be manifestly incorrect to add the two prices, 10 and $10\frac{1}{4}$ cents, and divide by the number of bales, as the result would be $1012\frac{1}{2}\frac{1}{7}$ cents as the average price as shown in the former process, which is evidently not correct, and is caused by the inequality of the weights of the bales.

If the weights of the bales were equal, then Rule 2, First Process, would apply.

Ex. 2. Try the problem again by assuming the M. to weigh 560 and S. M. 520, prices remaining the same.

1 bale 520 at $10\frac{1}{4}$ = \$53.30

1 bale 560 at 10 = 56.00

Total weights 1080

\$109.30

$$109.30 \times 100 = 10930 \text{ cts.}$$

$$10930 \div 1080 = 1012 \frac{1}{27} \text{ cents} = 10.12 \frac{1}{27}.$$

In performing this division, the process is the same as for that in Example 1:

$$\begin{array}{r}
 1080 \overline{)10930.00} \quad (10.12 \\
 \underline{1080} \\
 1300 \\
 \underline{1080} \\
 2200 \\
 \underline{2160} \\
 40 \\
 \underline{} = \frac{1}{27} \\
 1080
 \end{array}$$

It will be noted that after consuming all the figures in the dividend (10930) that an additional naught is added twice in order to carry the division to 4 decimal places in the quotient to get the result to points and fraction of them. The $\frac{40}{1080}$ as a remainder is reduced to its lowest term, equalling $\frac{1}{27}$. The answer may be read, ten, twelve and one twenty-seventh, and pointed off as shown.

Ex. 3. What is the average of

$$1 \text{ M.} \quad 586 \text{ lbs. at } 10 \text{ cents} = \$ 58.60$$

$$1 \text{ S. L. M.} \quad 540 \text{ lbs. at } 9\frac{3}{4} \text{ cents} = 52.65$$

$$\text{Total weight } 1126$$

$$\text{Total value } \$111.25$$

$$\text{Ans. } 9.88 + \text{cts.}$$

Ex. 4. Average this list:

$$2 \text{ G. M. } 1120 \text{ lbs. at } 8 \text{ cts.} = \$ 89.60$$

$$1 \text{ S. M. } 560 \text{ lbs. at } 7\frac{3}{4} \text{ cts.} = 43.40$$

$$2 \text{ M. } 1000 \text{ lbs. at } 7\frac{1}{2} \text{ cts.} = 75.00$$

$$\text{Ans. } 7.76 + \text{cts.}$$

Ex. 5. What should I pay for this list of cotton as an average price?

2 G. M.	980 lbs. at 9	cts.
3 M.	1610 lbs. at $8\frac{1}{2}$	cts.
4 S. L. M.	2180 lbs. at $7\frac{3}{4}$	cts.
2 L. M.	1050 lbs. at 7	cts.

Ans. $8.03+$ cts.

Ex. 6. As an all round price what should a buyer pay for 15 B/C at 8 cts. B/M; $\frac{1}{4}$ up for S. M., $\frac{1}{2}$ up for G. M., $\frac{1}{4}$ down for S. L. M., and 100 down for L. M. Three G. M. 1610; four S. M. 2012; one M. 503; five S. L. M. 2490; and two L. M. 1015 lbs., respectively?

Ans. $7.95+$ cts.

NOTE.—In making this calculation, start from the M. price, 8 cts., to which add $\frac{1}{4}$ for S. M., which is $8\frac{1}{4}$; add $\frac{1}{2}$ to M. for G. M., equals $8\frac{1}{2}$; $\frac{1}{4}$ off M. equals $7\frac{3}{4}$ for S. L. M., and from M. price take 1 cent off—1 cent equals 100 points—leaving 7 cts. for L. M.

Ex. 7. C is offered 10.30 for 1 S. M. B/C, 536 lbs., and 10.05 for 1 M. 520 lbs, or 10.15 as an average price. He sold for 10.15; did he gain or lose by accepting this, and how much?

Ans. Lost $28\frac{1}{2}$ cts.

NOTE.—Find the average price, and if 10.15 is more, he gained, if less, he lost.

Ex. 8. Mr. Baum sold 1 G. M. bale, 496 lbs. at $10\frac{1}{4}$ cents; and 2 M. bales, 512 and 528 lbs. each, at 9.80; what did he get for this cotton, and what was the average price?

Ans. Received \$152.76; average, $9.94+$ cts.

Ex. 9. Average: 3 S. G. M. 1640 lbs., 2 S. M. 1080

lbs., 2 S. L. M. 992 lbs., 1 L. M. 576 lbs., 2 S. G. O. 1120 lbs.

B/M 5 cents, $\frac{5}{8}$ on for S. G. M., $\frac{1}{2}$ on for G. M., $\frac{1}{4}$ on for S. M., $\frac{3}{8}$ off for S. L. M., 125 off for L. M., and 200 for S. G. O.

Ans. 4.62+ cts.

NOTE.—See note to, and solve as problem 6.

Ex. 10. Find the average for this list of cotton, M/B 9 cents.

1 M. F. 520 lbs. 150 on, 2 S. G. M. 1040 lbs. 100 on, 3 S. M. 1560 lbs. $\frac{3}{8}$ on, 8 M. 4160 lbs. nothing on nor off—passed, 5 S. L. M. 2600 lbs. $\frac{3}{8}$ off, 1 L. M. 520 lbs. 100 off, 2 S. G. O. 1040 lbs. 200 off, 10 S. M. T. 5200 lbs. 10 off, 9 S. L. M. T. 4680 lbs. 75 off, 7 L. M. T. 3640 lbs. 125 off, 2 M. S. 1040 lbs. 50 off.

Ans. 8.60 $\frac{1}{2}$ cts.

TO FIND THE AVERAGE PRICE WHEN THE
NUMBER AND CLASS OF EACH BALE ARE
GIVEN BUT NOT THE WEIGHTS.

THIRD PROCESS.

The following rule illustrates one of the short methods of finding the average price where the weights of the bales are unknown.

The average thus found is not accurate, but approximates very closely.

RULE 4.—Specify the numbers representing the bales as that many pounds; multiplying the numbers of the different bales by the grade price of the bales; add the products, and divide their sum by the sum of

the numbers of the bales, the quotient will be the average price, nearly.

Ex. 1. Find the average price of 1 M. B/C at 10 cents, and 1 S. M. B/C at $10\frac{1}{4}$ cents.

Explanation :

Bale	Price		
1	$\times 10\frac{1}{4}$	=	\$.1025
1	$\times 10$	=	.1000

Number of bales 2 Sum of prices divided by 2).2025

Average price \$.1012 $\frac{1}{2}$

\$.1012 $\frac{1}{2}$ = 10.12 $\frac{1}{2}$ or 10 $\frac{1}{8}$ cts.

(See example 1 under Rule 2.)

Ex. 2. Find the average of 2 G. M. at 8 cents, 1 S. M. at $7\frac{3}{4}$ cents, 2 M. at $7\frac{1}{2}$ cents.

Ans. 7.75 cts.

Explanation :

2	$\times 8$	=	\$.16
1	$\times 7\frac{3}{4}$	=	.0775
2	$\times 7\frac{1}{2}$	=	.15

Total 5 Sum of prices \$.3875

\$.3875 divided by 5 = 5).3875

Average price \$.0775

(See example 4 under Rule 3.)

NOTE 1.—This is usually read 7.75 (seven seventy-five), that is, 7 cents and $\frac{3}{4}$ of a cent.

2. In this and problem 1, the numbers of the bales are recognized as that many pounds. Example 2, if 1 pound G. M. cotton is worth 8 cents, 2 pounds are worth twice 8 cents = 16 cents; 2 pounds M.

cotton at $7\frac{1}{2}$ cents a pound equal 15 cents, etc. Adding the prices of all the bales, gives $38\frac{3}{4}$ cents for 5 pounds of cotton; if 5 pounds are worth $38\frac{3}{4}$ cents, 1 pound is worth $\frac{1}{5}$ of that amount = $7\frac{3}{4}$ cents.

Finding the averages of different ingredients whose prices are not the same are exemplified under Alligation Medial; the principles of Rule 4 here given, show its application in averaging cotton prices.

Ex. 3. What should I pay as an average price for 1 G. M. at 9 cents, 3 M. at $8\frac{1}{2}$ cents, 4 S. L. M. at $7\frac{3}{4}$ cents, 2 L. M. at 7 cents?

Ans. $8.04 +$ cts.

(See problem 5, Rule 3.)

Ex. 4. Find the average of this list of cotton; M/B $8\frac{1}{4}$ cents: 2 S. M. at $8\frac{1}{2}$ cents, 5 M. at $8\frac{1}{4}$ cents, 7 L. M. at $7\frac{1}{4}$ cents, 3 S. G. O. at $6\frac{1}{4}$ cents.

Ans. $7.51 +$ cts.

Ex. 5. Mr. Johnson classed his own cotton as 3 G. M., 1 S. M., 5 M., and 1 S. L. M.; when he sold it the buyer classed it 1 G. M., 2 S. M., 3 M., 1 S. L. M. and 2 L. M.; how many points difference in the grades?

M. is worth 10 cents, $\frac{1}{4}$ and $\frac{1}{2}$ on for S. M. and G. M., $\frac{5}{16}$ and 100 off for S. L. M. and L. M.

Explanation: Mr. Johnson's class:

3 G. M.	$10\frac{1}{2} = \$.315$
1 S. M.	$10\frac{1}{4} = .1025$
5 M.	$10 = .5000$
1 S. L. M.	$9\frac{1}{16} = .096875$
<hr/>	<hr/>
10	$10)1.014375$

$\$.1014375 = .101\frac{7}{8}$ cts.

His average price is $.101\frac{7}{8}$ cts.

The buyer's class:

2 G. M.	$10\frac{1}{2}$	= \$.21
2 S. M.	$10\frac{1}{4}$	= .2050
3 M.	10	= .3000
1 S. L. M.	$9\frac{1}{6}$	= .096875
2 L. M.	9	= .18

10 bales Divide by 10) .991875

.0991875 = $.099\frac{3}{16}$

His average price is $.099\frac{3}{16}$ cts.

Johnson's class = \$.1014375

Buyer's class = .0991875

Difference in class = \$.0022500 = $22\frac{1}{2}$ points.

NOTE.—This difference of $22\frac{1}{2}$ points is equivalent to $112\frac{1}{2}$ cents value on a bale of 500 lbs., and on 10 bales, ten times $112\frac{1}{2}$ = \$11.25.

If the buyer classed the cotton correctly, Mr. Johnson overclassed his cotton by \$11.25 too much. If Mr. Johnson was correct, the buyer classed it too low, and caused Mr. Johnson to lose \$11.25.

This certainly emphasizes the necessity of each and every cotton grower's acquainting himself with his own products that he may be able to determine with some degree of accuracy the different grades of cotton grown by himself, and to estimate their value.

Ex. 6. Williams & Smith, Jackson, Miss., shipped 50 B/C to Jones & Brown, New Orleans, which was sold for 11 cts. B/M f. o. b. Jackson, the weights and grades being guaranteed by the shippers, who classed the cotton as 2 S. G. M., 5 G. M., 7 S. M., 10 M., 15 S. L. M., 6 L. M., 3 S. G. O., 2 G. M. T.

The differences to apply were S. M. $\frac{5}{16}$, G. M. $\frac{1}{2}$, S. G. M. $\frac{3}{4}$ on; for S. L. M. $\frac{5}{16}$, L. M. $\frac{3}{4}$, S. G. O. $1\frac{1}{2}$ off; G. M. T., M. value.

The cotton weighed 26,500 pounds at shipping point.

Williams & Smith drew for the full value of their cotton on the B/L, and their draft was so honored on presentation to consignee in New Orleans.

The classification by Jones & Brown was, 1 S. G. M., 5 G. M., 5 S. M., 11 M., 16 S. L. M., 7 L. M., 4 S. G. O., 1 G. M. T.

The weights in New Orleans given in the returns, were 26,180 pounds.

What amount of *reclamation* will be made by Jones & Brown?

Ans. \$55.66+.

Explanation: Williams & Smith's class:

2 S. G. M.	$11\frac{3}{4} = \$.235$
5 G. M.	$11\frac{1}{2} = .575$
7 S. M.	$11\frac{1}{8} = .791875$
10 M.	$11 = 1.10$
15 S. L. M.	$10\frac{1}{8} = 1.603125$
6 L. M.	$10\frac{1}{4} = .615$
3 S. G. O.	$9\frac{1}{2} = .285$
2 G. M. T.	$11 = .22$

50 bales	50) 5.425000
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Average price \$.1085

Jones & Brown's class:

1 S. G. M.	$11\frac{3}{4}=\$$.1175
5 G. M.	$11\frac{1}{2}=\$$.5750
5 S. M.	$11\frac{5}{16}=\$$.565625
11 M.	$11=\$$	1.2100
16 S. L. M.	$10\frac{11}{16}=\$$	1.7100
7 L. M.	$10\frac{1}{4}=\$$.7175
4 S. G. O.	$9\frac{1}{2}=\$$.3800
1 G. M. T.	$11=\$$.1100

50 bales	50)	5.385625
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Average price \$.1077 +

Shipper's average price \$.1085

Buyer's average price .1077

Difference \$.0008

Amount paid for 26,500 lbs.

Amount received 26,180 lbs.

Short 320 lbs.

$26,180 \times 8$ (points) = \$20.944

$320 \times .1085 = 34.72$

Am't reclaimed \$55.664

(1) 26500 lbs. at 10.85= \$2,875.250

320 lbs. at 10.85=\$34.72

26180 lbs. at (points) 8= 20.944

Total paid, too much 55.664

Amount invoice in New Orleans \$2,819.586

$$(2) \quad \begin{array}{r} 26500 \times 10.85 = \$2,875.250 \\ 26180 \times 10.77 = \underline{2,819.586} \end{array}$$

Amount overpaid. \$ 55.664

The loss of 320 lbs. was paid for at original price, 10.85; the loss of 8 points is calculated on the weights shown at New Orleans, 26,180 lbs.

Ex. 7. A buyer bought from wagons on the streets during the day 12 M. at 9.80, 3 G. M. at $10\frac{3}{8}$, 6 S. L. M. $9.42\frac{1}{2}$, 2 L. M. 8.60, 1 G. M. T. 9.80; what was the average paid for this list of cotton?

Ans. 9.68 cts., nearly.

Ex. 8. If the buyer sold this lot of cotton at $6\frac{1}{4}$ points advance, what did he gain, the cotton averaging 500 lbs. to the bale?

Ans. \$7.50.

Ex. 9. At what price per pound did he sell it?

Ans. $9.74\frac{1}{4}$ cts.

Ex. 10. Geo. Randolph, a grower, was offered 8.85 for his entire crop of 36 B/C at Gatesville, Texas, refusing this offer, he shipped the lot to a commission merchant at Galveston, Texas.

The cotton was held 4 months and sold for 10 cts. a pound. What did Mr. Randolph gain, freight being 55 cents per hundred, brokerage \$1.00 per bale first month, and 30 cents a bale each month thereafter, not reckoning any interest on the money for the time?

The cotton weighed 18,720 lbs.

Ans. Gain, \$43.92.

Explanation:

- (1) 18720 at 10 cts. = Selling price = \$1,872.00
 18720 at 8.85 cts. = Offered price = 1,656.72

Difference in offered and selling price = \$ 215.28

Charges:

18720 at 55 cts., freight \$102.96

36 bales, Com. \$1.00 36.00

36 bales, 30 cts. each

1 month \$10.80

3 months = $3 \times 10.80 =$ 32.40

Total charges 171.36

Gain \$ 43.92

- (2) Selling price 10 cts.
 Offered price 8.85 cts.

Difference, gain 1.15 cts.

18720 at 1.15 = \$215.28

Less charges = 171.36

Gain = \$ 43.92

TO FIND THE AVERAGE PRICE WHERE NUMBER AND CLASS BUT NOT WEIGHTS OF EACH BALE ARE GIVEN.

FOURTH PROCESS.

This is known as the sixteenth or $6\frac{1}{4}$ point process.

To make cotton calculations involving its use, quotations must be in sixteenths or multiples of it.

Like the preceding or third process, averages are obtained without the use of weights, and the result is a close approximation.

For practical purposes, among all buyers, this process is used almost universally, as it is brief, easily learned, and very convenient for those buying and selling in lots, after making the classification.

After making the average, the cotton is usually weighed, and the weights multiplied by the average price will give the total amount.

Consignees in giving account-sales of cotton received by them as purchasers or factors, generally multiply the total weights of each grade by the price of each grade, and from the sum of the totals, deduct whatever charges there may be, remitting the balance.

This operation is exemplified under Second Process, Rule 2.

In performing the operation under this process, it is more convenient to understand and represent the different grades by characters, letters or numbers.

Let, for example, the grade

Fair, be represented by (full grade) a.

Strict Mid. Fair (one-half grade) by b.

Mid. Fair (full grade) by c.

St. Good M. (one-half grade) by d.

Good M. (full grade) by 1.

Strict M. (one-half grade) by 2, and so on, see page 207.

RULE 5.—1. *Designate the grades by their character representations, as, a, b, c; 1, 2, 3, etc.; opposite each grade place the number of bales of that grade;*

multiply these numbers by the number of sixteenths the class shows to be above or below middling value; add the products of the sixteenths above and below middling, separately; subtract the lesser from the greater amount, multiply the remainder by $6\frac{1}{4}$, divide the product by the number of bales; the quotient will be the number of points to be added to or subtracted from the middling price.

2. *If the excess is above, add the points to, if below, subtract from the middling price, the result will be the average price, nearly.*

Ex. 1. Find the average of 1 M., 2 S. M., 3 L. M.; M/B being 10 cents, $\frac{1}{4}$ off for S. M., $\frac{3}{4}$ off for L. M.

Arrange the work in this way:

Grades.	Bales	Price.	Sixteenths.	Sixteenths.
(M.) 3	1 Pass 10		Bales	
(S. L. M.) 4	2	$9\frac{3}{4}$	$4 \times 2 =$	8
(L. M.) 5	3	$9\frac{1}{4}$	$12 \times 3 =$	36
	—		—	—
	6	Added =	16	44

$44 \times 6\frac{1}{4} = 275$ points.

275 divided by 6 = $6)275$

$45\frac{5}{8}$ points.

As the sixteenths are on cotton below M. in value, they must be taken off M. price—

M. price is 10 cents = 1000 points.

$1000 - 45\frac{5}{8} =$ 1000
 $45\frac{5}{8}$

Average price = \$.09541 = 9.541 cts.

Explanation: In first column the figures 3, 4 and 5 represent the different grades; the next column the bales; the next the price; the next the number of *sixteenths* each grade is below M.; the 4-sixteenths is multiplied by 2, the number of bales of that grade, making 8-sixteenths; the 12-sixteenths is multiplied by 3, the number of bales of that grade, making 36 sixteenths, which added to the 8 gives 44-sixteenths below M. To reduce which to points, the 44-sixteenths are multiplied by $6\frac{1}{4}$ points (equalling $\frac{1}{16}$), giving 275 points for the 6 bales; to get the number of points for 1 bale, divide the 275 by 6, which is equal to $45\frac{5}{6}$ points to be taken from the M. price.

Ex. 2. Average the following: 2 G. M. at 8 cts., 1 S. M. at $7\frac{3}{4}$ cts., 2 M. at $7\frac{1}{2}$ cts.

Ans. 7.75 ($7\frac{3}{4}$) cents.

Explanation:

(Grade.)	(Bales)		(Sixteenths.)		(Sixteenths.)
1	2	×	8	=	16
2	1	×	4	=	4
<hr/>					
3	2 Pass		Sum	=	20
<hr/>					
20×6¼=125 points. 125÷5(No. bales)=25 points.					
M. price is			\$.0750		
Plus			.0025		

Leaves average price \$.0775 = 7.75 cents.

(See problem 4, Rule 3, and problem 2, Rule 4.)

NOTE.—The M. price is $7\frac{1}{2}$, $\frac{1}{4}$ more = $7\frac{3}{4}$, then from M. to S. M. is $\frac{1}{4}$ “up;” $\frac{1}{4} = \frac{4}{16}$ and is placed as 4 in the sixteenths column; from M. at $7\frac{1}{2}$ to G.

M. is $\frac{1}{2}$ "up;" $\frac{1}{2} = \frac{8}{16}$, put here as 8 in the sixteenths column.

Two bales at 8-sixteenths = 1 bale at 16-sixteenths; one bale multiplied by 4 = 4-sixteenths; both added = 20-sixteenths, which reduced to points by multiplying $6\frac{1}{4}$, and dividing by the number of bales, gives the number of points to be added to M. price.

M. being the base from which all basic calculations are made, is *passed* in making averages under this process.

Ex. 3. What should I pay as an all round price for 2 G. M. at 9, 3 M. at $8\frac{1}{2}$, 4 S. L. M. at $7\frac{3}{4}$ and 2 L. M. at 7 cents?

Ans. 8.04+ cents.

Explanation:

(Class.)	(Bales.)		(Sixteenths.)		(Sixteenths.)
1	2	×	8	=	16 on
2	0		0		
3	3	Pass			
4	4	×	12	=	48 off
5	2	×	24	=	48 off

—
11 bales

—
Total 96

$$96 - 16 = 80. \quad 80 \times 6\frac{1}{4} = 500. \quad 500 \div 11 = 45\frac{5}{11}.$$

$$\text{M. } 8\frac{1}{2} \text{ cts. } - 45\frac{5}{11} \text{ points} = \$.0850$$

$$.0045\frac{5}{11}$$

Average price

$$= \$.0804\frac{6}{11}$$

See problem 5, Rule 3.

NOTE.—1. Some of the grades are above M, and some below, which when reduced to sixteenths, equal 16-sixteenths above M. value, and 96 below that grade,

taking one from the other, leaves an excess of 80-sixteenths below the M. base; reducing to points, give $45\frac{5}{11}$ to be taken from the M. price. From M. at $8\frac{1}{2}$ to S. L. M. at $7\frac{3}{4}$ cents equals $\frac{3}{4}$ off; $\frac{3}{4} = 1\frac{3}{8}$ placed opposite that grade as 12; from M. $8\frac{1}{2}$ to L. M. at 7 cents equals $1\frac{1}{2}$ cents off; 1 cent off equals $\frac{1}{16}$, $\frac{1}{2}$ cent off equals $\frac{8}{16}$, 16- and 8-sixteenths added equal $\frac{24}{16}$, placed opposite that grade as 24; these 2 numbers, 12 and 24, multiplied by their grades opposite, make a total of 96-sixteenths for the grades off the M. price.

2. Care should be taken to place points under points to make a correct subtraction. Should any doubt arise, consult the tables for cents, mills and points.

Ex. 4. Average problem 9, Rule 3.

Statement:

Class.	Bales.		Sixteenths.		Sixteenths.
1	3	×	10	=	30
2	2	×	4	=	8
					—
3	Pass			Total	38 up.
4	2	×	6	=	12
5	1	×	20	=	20
6	2	×	32	=	64
					—
				Total	96 down.

Follow the Rule.

Ans. 4.63+ cents.

Ex. 5. What should I pay for a list of cotton, as an average price, in which there are 1 G. M., 8 St. M., 10 M., 22 S. L. M., 25 L. M., 10 S. G. O., 5 S. L. M. T., 19 G. O.?

B/M $8\frac{1}{2}$, $\frac{5}{16}$ and $\frac{9}{16}$ up; $\frac{6}{16}$, 100, 150, $\frac{8}{16}$ and 300 off, respectively, in the order named.

Ans. 7.45+ cts.

Statement:

Class.	Bales.		Sixteenths.		Sixteenths.
1	1	×	9	=	9
2	8	×	5	=	40
					—
3	10	Pass			49 up.
4	22	×	6	=	132
5	25	×	16	=	400
6	10	×	24	=	240
7	19	×	48	=	912
4t	5	×	8	=	40

Total 1724 down

NOTE.—For the grades L. M. 100, S. G. O. 150, and G. O. 300 points off, are represented in the first sixteenths columns, as 16, 24 and 48, respectively. As 100 is 16-sixteenths, it is given as 16; 16-sixteenths equals 100, and 8-sixteenths = 50, then $150 = 16 + 8 = 24$ -sixteenths; if $150 = 24$ -sixteenths, $300 =$ twice 24-sixteenths = 48-sixteenths, stated as 48. Again, $100 = \frac{16}{16}$, $300 = 3 \times \frac{16}{16} = \frac{48}{16}$.

Ex. 6. What would be the price of G. M. cotton at $\frac{17}{2}$ "on," if M. is worth $10\frac{3}{8}$?

Ans. $10.90\frac{5}{8}$ cts

(See tables for *eighths* and *thirty-seconds*, and add them decimally.)

Ex. 7. Middling quoted at $7\frac{1}{4}$ cents, what would be the value of G. O. at 325 off?

Ans. 4 cents.

NOTE.—The 325 here means 325 points, equal to $3\frac{1}{4}$ cents, subtracted from $7\frac{1}{4}=4$ cents.

Decimally $7\frac{1}{4}=\$.0725$

325 points = .0325

.04= cents.

Often buyers speak of G. M. as “goods,” S. M. as “stricts,” S. L. M. as “strict lows,” L. M. as “lows,” or G. M. as “ones,” S. M. as “twos,” M. as “threes,” S. L. M. as “fours,” L. M. as “fives,” S. G. O. as “sixes,” G. O. as “sevens,” S. L. O. as “eights,” and L. O. as “nines.”

These grades cover a very large per cent of the cotton and enter extensively into most all cotton calculations.

Ex. 8. A gentleman sold 3 2's, 4 4's, and 5 6's at $8\frac{7}{8}$ M/B; the differences being $\frac{5}{16}$ up; $\frac{5}{16}$, $1\frac{1}{4}$ down; what was the average price?

Ans. $8.32+$ cts.

Statement:

Class.	Bales.	Sixteenths.	
1	0	0	
2	3 ×	5 =	15 up.
3	0 Pass		
4	4 ×	5 =	20
5	0	0	
6	5 ×	20 =	100
			—
			120 down

NOTE.—The 20-sixteenths $=1\frac{1}{4}$ off.

$100=\frac{16}{16}$, $\frac{1}{4}=\frac{4}{16}$. $\frac{16}{16}+\frac{4}{16}=\frac{20}{16}$.

Ex. 9. Solve by Rule 4, Third Process.

Ans. $8.32+$ cts.

Ex. 10. Solve by Rule 3, Second Process, weights of the S. M. being 1632, S. L. M. 2208, and the S. G. O. 3120 pounds.

Ans. 8.29 cts., nearly.

Ex. 11. What is the difference in value of this list of cotton calculated at 8.29 and 8.32 cts. a pound?

Ans. \$2.08+.

Ex. 12. Find the average of 10 "Goods," 5 "Stricts," 5 "Strict Lows," 4 5-t's, and 1 M. S. Premiums $\frac{1}{8}$ and $\frac{1}{4}$ for "Stricts" and "Goods." Discounts $\frac{3}{16}$ for "Strict Lows," $93\frac{3}{4}$ for 5-t's and $56\frac{1}{4}$ for the M. S. M/B 7 cents.

Ans. $6.91\frac{1}{2}$.

Statement and solution:

1	10	×	4	=	40
2	5	×	2	=	10
					—
3	0	Pass			50 up
4	5	×	3	=	15
5-t's	4	×	15	=	60
M. S.	1	×	9	=	9
					—
	25	bales			84 down.

$84 - 50 = 34$; $34 \times 61\frac{1}{4} = 212.5$; $212.5 \div 25 = 8.5$ points.

M. price 7 cents = \$.0700

Less $8\frac{1}{2}$ points = .0008 $\frac{1}{2}$

Average \$.0691 $\frac{1}{2}$ = 6.91 $\frac{1}{2}$ cts.

Ex. 13. A number of farmers having 200 B/C stored in a cotton yard, thinking the market satisfactory, offered the cotton for sale to the highest bidder, the highest being 8 cents M/B; the premiums were for S. M. $\frac{5}{16}$, G. M. $\frac{8}{16}$, S. G. M. $\frac{3}{4}$; for the lower

grades, the discounts were for S. L. M. $\frac{5}{16}$, L. M. $\frac{3}{4}$.

The quoted M. price for the open market was $77\frac{7}{8}$; what was the average price realized by selling in bulk, the cotton weighing 102,000 pounds?

In this list were 5 "St. Goods," 55 "Goods," 102 "Stricts," 30 M's and 8 "Strict Lows."

Ans. $8.30 +$ cts.

Statement: M/B 8 cents.

d	5	×	12	=	?
1	55	×	8	=	
2	102	×	5	=	— up.
3	30	Pass			
4	8	×	5	=	— down.

Ex. 14. How much did the farmers gain by securing a premium of this $\frac{1}{8}$ above the market price?

Ans. \$127.50.

Ex. 15. What was the gain on each bale?

Ans. $63\frac{3}{4}$ cents.

Ex. 16. Farmers combining, sold 4,000 B/C for themselves, in Atlanta, Ga., at a premium of $\frac{5}{16}$ above the market. For S. M., G. M., and S. G. M. the premiums were $\frac{3}{8}$, $\frac{9}{16}$ and 100; for S. L. M., L. M. and S. G. O., the discounts were $\frac{5}{16}$, $\frac{7}{8}$ and 150, respectively. M. price was $101\frac{1}{4}$ cents in Atlanta; the cotton weighed 1,960,000 pounds; there were 50 S. G. M., 870 G. M., 1,520 S. M., 1,260 M., 205 S. L. M., 70 L. M. and 25 S. G. O.; what was the average price; what the gain on each bale; and what the whole gain to the farmers from this co-operative sale?

Ans. Average, 10.80, nearly.

Gain on bale, $\$1.53\frac{1}{8}$.

Gain to farmers, \$6,125.

Statement: M/B $10\frac{9}{16}$ cts.

d	50	×	16	=	?
1	870	×	9	=	
2	1520	×	6	=	—up.
3	1260	Pass			
4	205	×	5	=	
5	70	×	14	=	
6	25	×	24	=	— down.

NOTE.—The *market* price is 10.25; the gain in class is $23.66+$ points, added to $10.25=10.4866+$ cents as the average price at 10.25; the market being 10.25 and a premium of $\frac{5}{16}$ ($31\frac{1}{4}$ points) additional as a plus amount to secure this list of cotton, equals $10.25+31\frac{1}{4}=10.56\frac{1}{4}$, or $10\frac{9}{16}$ as the *basis* for this sale-price. Now, $10.56\frac{1}{4}$ being the basis price and the gain in class being $23.66+$ points, added to $10.56\frac{1}{4}=10.799+$, or 10.80, nearly, as average price.

It is not usual to secure such premiums even on a large list of cotton as this, but as the lot shows to be largely high grade, with a very small percentage of “hard” cotton, exceptional values were obtained.



CHAPTER VII.

CHECKS AND DRAFTS.

Payments liquidating claims for cotton so frequently require large sums of money, the handling of which is usually avoided by the use of *checks* and *drafts*.

Orders drawn on banks, individual firms or corporate bodies for immediate payment of money are called *Checks*.

The date, the amount, the name of the bank, firm or individual, and location, are stated in the check.

Checks are used in payment of claims locally, generally.

A written order to an individual firm or bank for the payment of money is called a *Draft*.

A draft made for immediate payment, is known as a *Sight Draft*.

If its payment is directed at some future time, it is designated as a *Time Draft*.

Drafts made by one bank upon another, are sometimes called *Bills of Exchange*.

When a draft does not sell for its face value, the exchange is made at a *Discount*.

When a draft commands face value, its exchange is said to be at *Par*.

When a draft is sold for more than face value, the exchange is made at a *Premium*.

Drafts written in one place to be paid in another, are *drawn* to be paid at the other place.

A person *draws* upon another, when he *writes* the draft to be paid.

Drafts drawn for payment in any country having the same currency, are called *Domestic Drafts*, and the exchange is *Domestic Exchange*, in contradistinction to drafts drawn for foreign account.

Drafts sometimes are not paid when presented, but are accepted to be paid in a certain number of days, when so stated, the word "*Accepted*" is written across the face of the bill, with the signature of acceptor, date and place of payment, if desired, usually written in red ink.

Drafts are similar to checks, in showing the amount, date, place of the maker, the one to whom the money is paid, and the remitter.

There are always three parties, and sometimes four, to transactions in exchange.

The *Drawer*, the person signing the draft; the *Drawee*, the person to whom the draft is addressed; the *Payee*, the person to be paid.

The payee may be the one himself to whom the money is to be paid.

Note.—For example, a person in Atlanta, Ga., wishing \$1,000 paid to himself in New York, may put \$1,000 in the Atlanta bank and take exchange on New York for a similar sum, and receive \$1,000 cash from the New York bank when he arrives.

EXCHANGE.

Exchange is a convenient method adopted by our banking institutions for payment of sums of money in one place, of like amount in another, without actual necessity of transmitting the cash. The risk and trouble of sending money is thus avoided.

The *Course of Exchange* deviates from par according to the superabundance or deficiency of supply of bills of exchange for sale. This variableness fluctuates as trade relationship differs in character between any two places.

Bills of Exchange are drafts drawn by one bank upon another in a different place.

Under the National Banking System, it is usual for banks to place a portion of their funds as credits in other banks.

The banks receiving these credits are called the *Correspondents* of the bank, or Reserve Agents.

If a bank at Salem, Ala., has \$200,000 as deposits, a portion of this amount may be placed in a bank at New Orleans; a portion with Montgomery, Atlanta, St. Louis, Chicago and New York banks as credits for the account of the Selma bank.

Let it be understood that the Selma bank has in New Orleans \$20,000; Montgomery, \$10,000; Atlanta, \$30,000; St. Louis, \$30,000; Chicago, \$20,000; New York, \$50,000, making in the hands of its *Correspondents*, \$160,000.

Parties in Selma desiring to pay certain sums of money in any of the other cities, buy drafts from the Selma bank on the other city, transmit the draft to the one to whom it is payable, who in turn, upon its receipt presents it to the bank on which it is drawn and receives the money.

Should a person in Selma wish to pay a bill for merchandise in Nashville, Tenn., he buys a draft from the Selma bank, either on St. Louis, Chicago or New York, and remits this draft (exchange) on say, New York; the merchant in Nashville receiving this New

York exchange, gives the Selma *drawer* credit for its face value, as he can place such a draft with any local Nashville bank and get its value in money on presentation, or a credit for its sum. Through such mediums established by the banking system, facilities for exchange are broader.

Buying and selling drafts of one place on another is called buying and selling Exchange.

Calculations respecting exchange between one place and another involve the principles of percentage.

Outside of the banking channels, individuals or firms sometimes place money in other places for credit, or draw upon others, taking bank credits, which are collected by drafts.

DOMESTIC EXCHANGE.

PROBLEMS.

1. A wishes to remit \$500 to New York, exchange being $\frac{1}{4}$ of 1 per cent; what is the cost of the draft?

Ans. \$501.25.

NOTE.—A wishes to send \$500 to New York, and wants a bank to send it for him. The bank knowing the rate of exchange to be $\frac{1}{4}$ of 1 per cent, agrees to send the money for \$501.25. A then pays the bank \$501.25; the bank writes a draft on its correspondent bank in New York for \$500, and keeps the \$1.25—this being the amount of exchange received for sending the money.

Explanation:

(1) One cent is .0100 (4 decimals).

$\frac{1}{4}$ of one cent is .0025 = $2\frac{1}{2}$ mills.

The bank's charge, then, is $2\frac{1}{2}$ mills on the dollar, =25 cents on 100 dollars and 5 times that on 500 dollars = \$1.25.

$$(2) \quad \$1.0025 \times 500 = \$501.25.$$

Ex. 2. A merchant in Waco, Texas, wishes to pay a debt of \$1,200 in St. Louis; what will be the cost of the draft at $\frac{1}{8}\%$ premium?

Ans. \$1,201.50.

Explanation: $\frac{1}{8}$ of 1 per cent = \$.0012 $\frac{1}{2}$; this = 12 $\frac{1}{2}$ cents on 100 dollars; \$1,200 = $1,200 \times .0012\frac{1}{2}$ = \$1.50. $\$1,200 + 1.50 = \$1,201.50$. Ans.

As the rate is a certain per cent on the dollar, by adding the rate on a dollar to it when at a premium, or subtracting when at discount, the dollar can be used as a base on which to make a rule.

To find the cost of a draft:

FOR SIGHT DRAFTS.

RULE.—Add to 1 dollar the rate of exchange, if at premium; subtract from 1 dollar the rate of exchange, if at discount; multiply the sum or remainder, by the face value of the draft, the result will be its cost, including exchange.

Ex. 3. Smith bought 50 B/C amounting to 2620 dollars. He gave a check on a local bank in Macon, Ga., and protected the check with a sight draft on New York. Exchange being $\frac{3}{4}\%$ premium, what was its face value, and the amount of exchange?

Ans., Face, \$2,639.65; Exchange, \$19.65.

As this is a sight draft, the premium of exchange is the only calculation necessary.

Explanation: (1) $\frac{3}{4}\% = \$.0075$; this being 7 $\frac{1}{2}$

mills on 1 dollar; $\$2,620 \times .00075 =$ cost of exchange $= \$19.65$. Ans.

(2) By the rule: exchange being at premium, add it to 1 dollar.

\$1.0000

.0075

$\$1.0075 \times \$2,620 = \$2,639.65 =$ cost draft.

$\$2,639.65 - \$2,620 = \$19.65 =$ cost exchange.

Ex. 4. A commission merchant sold 60 B/C for \$3,300, after deducting his commission at $2\frac{1}{2}\%$ and exchange at $\frac{1}{8}\%$ premium; what amount was remitted to the owner of the cotton, in a sight draft?

Ans. \$3,213.48.

Explanation:

Proceeds of sale \$3,300.00

$2\frac{1}{2}\%$ of \$3,300 = 82.50

Amount less com. \$3,217.50

Less Exchange = 4.02

Amount sight draft \$3,213.48

The bank sending this draft, kept the exchange, \$4.02, hence deducted from a portion of the gross receipts of the cotton sale.*

$\frac{1}{8}\%$ of \$3,217.50 $= \$4.02 +$. For brevity, point off 4 decimals, $= 32.1750$ and divide by 8)32.1750

4.0218 +

Ex. 5. A merchant in Boston having sold a quantity of wool for \$5,000, wished to remit this sum

*The exchange is calculated on the amount after deducting commission.

to New Orleans to invest in cotton; exchange being at 1 per cent discount, how much should he pay for the draft?

Ans. \$4,950.49.

The usual mode of making such computations is to deduct 1 per cent of \$5,000 from it; 1% of \$5,000 = \$50; \$5,000 — \$50 = \$4,950.

It is evident the true proportion would be \$100 in Boston would = \$101 in New Orleans, hence to get the result to exactness, divide \$5,000 by \$101 = \$4,950.49.

Ex. 6. A cotton buyer deposited a draft on Chicago in the bank at Oxford, Miss., for \$10,000. Exchange being $\frac{3}{4}\%$ premium, what was the net amount to the buyer's credit for cotton purchases?

Ans. \$9925.00.

Ex. 7. Should this buyer, in preceding example, wish \$10,000 to his credit for the draft, what amount of exchange would he be required to pay at same rate to secure it?

Ans. \$75.00.

Ex. 8. A cotton buyer was allowed 1 per cent commission for buying cotton. His first purchase being 100 bales valued at \$4,500, he wished to make a draft on Philadelphia, sufficient in amount to cover the value of the cotton, his commission, and exchange, it being $\frac{1}{4}\%$ premium. What was the face of the draft?

Ans. \$4,556.36.

Ex. 9. A cotton merchant in New Orleans, after business hours, bought by telephone, 200 B/C from a dealer in Jackson, Miss., for which he offered f. o. b. Jackson $9\frac{3}{8}$ cents and pay the exchange, or $9\frac{1}{2}$

cents a pound, and the dealer pay exchange; the dealer accepted the latter proposition; did he gain or lose, the cotton weighing 104,000 pounds, and exchange at $\frac{1}{4}$ of 1%?

Ans. Dealer gained \$8.05.

It is not usual to buy cotton in such manner, unless both parties are acquainted with the grades.

Ex. 10.

\$3500

Citizens' National Bank.

Flatonina, Texas.

At sight pay to the order of *D. J. Enroe* Three Thousand Five Hundred and no/100 Dollars and charge to account of

Alton B. Jones, *Cashier*.

To National Park Bank, New York.

Premium being $\frac{3}{8}\%$, what is the amount paid for this draft?

Ans. \$3,513.13.

TIME DRAFTS.

A bill not paid at sight, but drawn to mature at a stated time, after sight, is a mixed question of exchange and Bank Discount.

Solving problems involving the use of the two, require the use of the rules necessary for the solution of each, but into the one computation, the two must be combined.

Three days of grace are usually allowed on time drafts after the expiration of the time specified.*

The *proceeds* of a note, draft or account constitutes the amount left after deducting the bank discount.

*Several States have passed laws inimical to "days of grace" in which they are forbidden.

Bank Discount is simple interest on the face of the Note or Draft for the time to elapse from any given date until maturity, therefore it is Simple Interest of the face of the Note or Draft paid in advance.

TO FIND THE COST OF DRAFTS PAYABLE AFTER SIGHT.

RULE.—Find the proceeds of 1 dollar at bank discount for the stated time, at the rate prescribed, or the legal rate, if no rate is expressed; to this add the rate of exchange if at premium, or subtract if at discount; multiply the result by the face of the draft.

PROBLEMS.

Ex. 1. After buying 100 B/C valued at \$5,000, a merchant in Savannah gave to the local bank a draft payable 60 days after sight on New York, exchange being $\frac{3}{4}$ per cent premium, interest rate 6 per cent; what amount of credit would the bank allow the merchant?

Ans. \$4,985.00.

Explanation:

The interest (bank discount) on \$1, 63 days = \$.0105

The premium of exchange on \$1 at $\frac{3}{4}\%$ = .0075

The difference is \$.0030

As the face of the draft is \$5,000, the bank will deduct $\frac{3}{10}$ of 1 per cent = \$15, leaving \$4,985 to the merchant's credit.

This is a brief, clear way to obtain the result quickly, and also accurately. Of course, the interest is first calculated before attempting to formulate the statement.

By the Rule.—Interest on

\$1 for 63 days = \$.0105.

\$1—\$.0105=\$.9895.

\$.9895+\$.0075 (Premium) =\$.9970.

\$.9970×\$5,000=\$4,985.

To understand fully its conception, the problem may be stated as follows:

Find the Simple Interest on \$5,000 for 63 days at 6%, which = \$52.50

The premium of exchange at a $\frac{3}{4}\%$ rate = 37.50

Difference between premium and interest =\$15.00
which can be deducted directly from the face of the draft, \$5,000, leaving \$4,985.

Now, the bank discount on \$5,000 being \$52.50,
deducted from \$5,000=proceeds = \$4,947.50
To which add the exchange = 37.50

Equals cost of draft \$4,985.00

If no interest were allowed on this draft it would cost the merchant \$5,037.50.

Ex. 2. Sold 320 B/C for \$17,600; accepted a New York draft at $\frac{1}{8}$ per cent discount, interest to accrue at 6 per cent for 90 days: I sold this draft to my home bank for cash; what amount did it pay me?

Ans. \$17,305.20.

Ex. 3. A Philadelphia firm executed a 30 days draft for \$42,000 at a 6 per cent rate, on New York, at $11\frac{1}{2}$ per cent discount; what is the cost of the draft?

Ans. \$41,139.00.

Ex. 4. Thompson & Co., Galveston, Texas, sold a list of 212 bales of Farmer' Union cotton at 11 cents, it being $\frac{1}{8}$ above quotation; the cotton gained 4 points

in class, and 460 lbs. in weight. This cotton was held 3 months, on which were charges of 1 dollar per bale the first month, and 23 cents a bale each month thereafter. It averaged 510 lbs. to the bale. What was the amount of the draft to cover payment of this cotton after deducting charges. Exchange being $\frac{1}{4}$ of 1%. What was the gain in class, weight and quotation?*

Ans. Amount s/d, \$11,554.62; gain in class, \$43.24; gain in weight, \$50.60; gain in quotation, \$135.15.

Ex. 5. A dealer in Atlanta, Ga., sold 500 B/C, valued at \$25,850 to Huggins & Co., Norfolk, Va., on whom he made a draft 60 d/s at 6% interest and $\frac{1}{8}\%$ premium, they were to pay the exchange, and he accepted the draft.

The dealer found 2 days after the cotton was moving and he had cashed the draft at the local bank, that Huggins & Co. had failed, and could not receive the shipment, he immediately diverted it to Wilson Cotton Co., Savannah, Ga., to whom he had to sell for $\frac{1}{8}$ less, and pay the exchange at the rate of $\frac{1}{4}\%$ premium on a sight draft.* What was his loss or gain by the failure of the Norfolk firm?

Ans. Gained \$45.23+.

NOTE.—The news of the fact of the failure of Huggins & Co., voided the draft on them, the value of which reflected on the bank cashing it for the dealer previously, but as the shipment was immediately sold to another, the dealer accepted the surrender of the original draft and issued a second one on Savannah, protecting both himself and the bank.

In such instances where shipments on a B/L prop-

*Note this is a sight draft.

erly indorsed, with the notation "Shipper's Order, Notify," on its face, the bank and shipper are both protected.

INDIRECT EXCHANGE.

Owing to the difference of the rates of exchange between any two places, and the frequent variation of it, it is often advantageous for persons wishing to make payment of any sum on some other place to draw through one, two or more intermediate points.

By this process of *Circular Exchange* the rate is sometimes cheapened.

Exchange of this character is called *Indirect, Circular or Arbitration of Exchange*.

PROBLEMS.

Ex. 1. A spinner buyer in Galveston, having purchased \$60,000 worth of cotton, for his Providence, R. I., mills, knowing the rate of exchange on New York to be $\frac{1}{2}\%$ premium, found by drawing indirectly through New Orleans banks, he could obtain a rate through the latter place of $\frac{1}{4}\%$ premium, and from New Orleans to New York, a discount of $\frac{1}{4}\%$; he drew through New Orleans; what did he save by drawing through that place, and what was the amount of his draft?

Ans. \$59,999.62 $\frac{1}{2}$
Saved \$300.37 $\frac{1}{2}$.

Explanation :

(1) \$60,000 = value of purchase.

\$1.005 = $\frac{1}{2}\%$ premium on 1 dollar on N. Y.

\$60,000 \times \$1.005 = \$60,300 = direct exchange, and the amount of such a draft.

$\$1.0025 = \frac{1}{4}\%$ premium on 1 dollar on N. O.

$\$60,000 \times \$1.0025 = \$60,150 =$ value sight draft on New Orleans.

$\$1.00 - \frac{1}{4}\% = \$1.0000 - \$.0025 = \$.9975$.

$\$.9975 =$ discount on \$1 from N. O. to N. Y.

$\$60,150 \times \$.9975 = \$59,999.96\frac{1}{2}$, indirect exchange.

Cost direct exchange $\$60,300.00$

Cost indirect exchange $59,999.62\frac{1}{2}$ Ans.

Saved $\$ 300.37\frac{1}{2}$ Ans.

(2) $\$60,000$ in New York = what in Galveston?

$\$1.00\frac{1}{2}$ in Galveston = $\$1.00$ in New York.

$\$1.00\frac{1}{4}$ in Galveston = $\$1.00$ in New Orleans.

$\$.99\frac{3}{4}$ in New Orleans = $\$1.00$ in New York, then

$\$60,000 \times \$1.00\frac{1}{2} =$ value

draft in Galveston $\$60,300.00$

$\$60,000 \times \$1.00\frac{1}{4} \times \$.99\frac{3}{4} =$

value draft $\$59,999.62\frac{1}{2}$ indirect.

Subtracting, leaves gain $\$ 300.37\frac{1}{2}$

Ex. 2. A Baltimore manufacturer's representative bought in Dallas, Texas, a list of cotton amounting to \$16,530; exchange on Baltimore being $\frac{1}{4}\%$ premium, he could by drawing indirectly through New Orleans and Havana, Cuba, secure exchange on New Orleans at $\frac{1}{8}\%$ premium; from New Orleans to Havana $\frac{1}{8}\%$ discount; from Havana to Baltimore $\frac{1}{4}\%$ discount. What is the cost of the draft each way, and what is the gain by circular exchange?

Ans., Cost direct $\$16,571.32 +$

Cost indirect $16,488.65 +$

Gain $\$ 82.67 +$

FOREIGN EXCHANGE.

People of one nation doing business with another, must have some basic value on which to consummate financial transactions.

This basis is the mint valuation of the monetary unit of the countries.

In Foreign Exchange it is necessary to find the value of money in one country in terms of unit value of the other.

The amount of money of one country of equivalent value of the other is called *Par of Exchange* between these two countries.

This value determined by the Director of the Mint is the *Intrinsic Par of Exchange*, while the market value of such coins dealt in by the banks may slightly vary from this, such bank valuations are called the *Commercial Par of Exchange*.

Remark.—By virtue of an act of Congress, August 28, 1894, the Director of the Mint, proclaimed “the values of foreign coins to be values of such coins in terms of the money of account of the United States, to be followed in estimating the value of all foreign merchandise exported to the United States on and after April 1, 1909, expressed in any of such metallic currencies.”

Copying from United States Treasury Department Circular No. 15, the subjoined Table, for reference in estimating moneys of foreign account is given.

TABLE No. 7.

Value of Foreign Coins.

Country	Standard	Monetary unit	Value in terms of U. S. gold dollar
Austria Hungary	Gold	Crown	\$0.203
Belgium	Gold	Franc	.193
Brit. Pos.	Gold	Dollar	1.000
China*	Silver	Tael**	.613
Denmark	Gold	Crown	.268
Finland	Gold	Mark	.193
France	Gold	Franc	.193
Ger. Empire	Gold	Mark	.238
Gr. Britain	Gold	Pound ster.	4.866½
Italy	Gold	Lira	.193
Japan.	Gold	Yen	.498
Mexico	Gold	Peso	.498
Netherlands	Gold	Florin	.402
Persia	Silver	Kran	.069
Portugal	Gold	Milréis	1.080
Russia	Gold	Ruble	.515
Spain	Gold	Paseta	.193
Sweden	Gold	Crown	.268
Switzerland	Gold	Franc	.193
Turkey	Gold	Piaster	.044

The values of the coins of the countries to which cotton is exported, are the principal ones here given.

Quotations giving exchange values for cotton in German territory are for four marks or reich's mark to the dollar.

*The value of the Tael in China has a different valuation in each of its National territorial divisions—the Tael in Amoy is \$.615; Cheefoo \$.588; Hankow \$.575; Nankin \$.608, etc.

**Canton.

Those showing the French exchange quotations are in five-francs and centimes, or decimals of a franc.

Drafts drawn for account of cotton destined for Russian points, are covered by sterling bills of exchange on London, usually drawn at 90 d/s.

For Germany, cotton shipments are protected by drafts on German banks, while for France, the stipulations generally require bills of exchange drawn on French banking institutions.

There are any number of well established banks in enlightened foreign countries, upon which spinners are accustomed to give drafts as reimbursements.

The rates of exchange vary from day to day, and buyers of exchange on this side are governed by the demand for it; by the rate of discount in London, Paris or Berlin, or on any country upon which the draft may be drawn.

The rates varying are for those termed *Commercial Exchange*, and may be higher, equal to, or lower than the Par of Exchange. A bill payable in sixty days costs less than sight exchange.

Calculations required for determining foreign exchange valuations are for those of commercial or quoted values.

Bills of Exchange on England, Ireland, Scotland are expressed in sterling money, called *Sterling Bills*. The denominations are in pounds (£), shillings (s.), and pence (d); 12d.=1s.; 20s.=1£=\$4.866½.

NOTE.—The old custom house silver valuation for the pound sterling was \$4.44⅔, hence, when exchange between the United States and England is really at *Intrinsic Par*, \$4.866½, it is at a premium of 9½ per cent above the old sterling silver rate.

Foreign Bills of Exchange are drawn or issued in triplicate form, known as *First*, *Second* and *Third* of Exchange, each of which are posted by different mails; the first to arrive at destination being vital and paid, renders the others void.

The operation to find the values of moneys of foreign account will show further necessity for the advantage of Indirect Exchange.

EXCHANGE ON ENGLAND.

PROBLEMS.

Ex. 1. What will be the value in dollars and cents for a bill on London for 500 pounds at Intrinsic Exchange?

Ans. \$2,433.25.

By Table No. 7, a £ sterling is quoted at \$4.866½, then, £500 would equal $500 \times \$4.866\frac{1}{2} = \$2,433.25$,

Ex. 2. What is the value in U. S. money of £500, bankers' exchange quoted at \$4.85½?

Ans. \$2,427.50.

Ex. 3. How much could a cotton buyer realize in New Orleans for a bill on Liverpool for £219, 10s., 6d., exchange being quoted at \$4.91½?

Ans. \$1,078.111+.

NOTE.—Reduce the 10s. and 6d. to a decimal of a pound, and proceed as in Example 1.

Explanation: 12d.=1s.; 20s.=£1. Multiply the 10s. by 12, as 12d.=1s., which gives 120d., to this add the 6d., making for 10s. and 6d. 126d. Reducing 1£ to pence, equals 240d.; now with these 2 numbers form the common fraction $\frac{126}{240}$; annexing naughts to the 126, and dividing by 240 as in division

of decimals, the answer .525 is obtained as a decimal of a pound. The statement, then, is $\text{£}219.525 \times \$4.91\frac{1}{2} = \$1,078.111+$, Ans.

$$\begin{array}{r} 10\text{s. } 6\text{d.} \\ 12 \\ \hline 120\text{d.} \\ 6 \\ \hline 126 = 126\text{d.} \end{array}$$

Ex. 4. A Manchester representative paid a Memphis cotton merchant a draft for $\text{£}600$, 16s. for a list of cotton; what is the equivalent value in U. S. money, exchange being $\$4.88$?

Ans. $\$2,931.904$.

Ex. 5. How much Federal money can I get for a draft on London for $\text{£}802$, 8s., payable in 60 days, when sterling exchange is quoted at $\$4.85\frac{3}{4}$?

Ans. $\$3,896.45+$.

NOTE.—In this problem a 60-day time is stated, but no interest rate, because the exchange rate is allowed for 60-day paper, and cashed at this valuation.

From the preceding examples, to find the cost of sterling exchange in dollars and cents, it is easy to form a

RULE.—(1) *Multiply the face of the draft in £'s by the stated exchange rate in dollars and cents.*

(2) *Reduce shillings, pence and farthings to a decimal of a pound before multiplying.*

To find the amount of sterling exchange that can be bought for a certain sum of United States money, reverse the operation:

RULE.—*Divide the face of the draft expressed in dollars and cents, by the rate of exchange for £1.*

Ex. 6. A buyer gave a draft on London for \$2,195.-475; if British exchange is quoted at $4.86\frac{2}{3}$, what is its value in £., s., and d.?

Ans. £451, 2s., 6d.

NOTE.—The division gives a direct quotient, £451.-125.

$.125 \times 20$ (No. shillings in £1) $= 2.500 = 2$ s. and .5 of a shilling, which is further reduced by multiplying by 12 (No. d. in a s.), giving a product $6.0 = 6$ d.

EXCHANGE ON FRANCE.

Calculations to find the equivalent value of French moneys are similar to those for English account.

Ex. 1. What can I get in U. S. money for a bill on Paris for 38,700 francs, the quotation being 5.16 fr. to 1 dollar?

Ans. \$7,500.

Explanation: $38,700 \div 5.16 = 7,500 \times \$1 = \$7,500$.

Ex. 2. I have a 90-day draft on Paris for 53,300 fr. for which a banker offers to cash at $5.12\frac{1}{2}$; what is its value in U. S. money?

Ans. \$10,400.

Ex. 3. A French buyer having \$1,500, wished to convert it into francs; what is its value in French money if exchange on Paris is quoted at $5.14\frac{1}{2}$?

Ans. 7,717.5 fr.

Explanation: $5.14\frac{1}{2}$ fr. $\times 1,500 = 7,717.5$ fr. Ans.

Ex. 4. I sold a Switzerlander 100 B/C for which he gave me a bill of exchange on Berne for 33,475 fr.; exchange on Switzerland being quoted at 5.15, what amount of U. S. money did I get from my local banker

who cashed it for $\frac{1}{8}\%$ premium, who in turn drew indirectly through New York?

Ans. \$6,491.87 $\frac{1}{2}$.

NOTE.—The franc in Switzerland is same in value as that of France.

EXCHANGE ON GERMANY.

Ex. 1. I sold to a German mill 220 B/C, averaging 510 lbs. each, at 11 $\frac{1}{2}$ cents, for which the agent gave me exchange on Hamburg for its value in marks at .95 $\frac{1}{2}$; what was the face of the bill in German money?

Ans. 54,043.97m.

Explanation: $220 \times 510 \times 11\frac{1}{2} = \$12,903.$

$12,903 \div .95\frac{1}{2} \times 4 = 54,043.97 +$ marks.

To find the value in German money:

RULE.—*Divide the amount of money in dollars and cents by the exchange rate; multiply the product by 4; the answer will be in marks.*

NOTE.—The rate is quoted for *four* marks, and the same result can be obtained by dividing by the cost of 1 mark.

Ex. 2. What is the value in marks for a bill on Berlin for \$17,526, 90 d/s, if offered exchange for it at .95 $\frac{1}{4}$?

Ans. 73,600m.

Ex. 3. A German buyer gave me a 90-day draft on Berlin for 73,600 marks in payment for a list of cotton, exchange being at .95 $\frac{1}{4}$, what was its worth in U. S. money?

Ans. \$17.526.00.

Explanation: $73,600 \times .95\frac{1}{4} \div 4 =$ Ans.

To find value in dollars and cents:

RULE.—*Multiply the face of the bill in marks by*

the exchange rate, and divide the product by 4; the answer will be in U. S. money.

Ex. 4. A Lancashire spinner buyer wished to pay \$5,000 for 100 B/C in Charleston, and by making exchange indirect through Paris, could get a rate of 5.30 fr. for 1 dollar; from Paris to London 25.40 fr. for £1; for how many pounds, shilling and pence will he have to make his draft?

Ans. £1,043, 6s., 1.7d.+.

Explanation: $\$5,000 \times 5.30 = 26,500$ francs.

$26,500 \div 25.40 =$ value in £'s and decimals of a pound, which reduce to s. and d.

Ex. 5. For a sale of cotton made by a Houston firm, it agreed to accept a draft on London for £5,000, exchange quoted at $4.88\frac{8}{9}$. The firm found by paying a commission of $\frac{1}{2}\%$ to a Hamburg agent, it could draw through that place indirectly on London, a mark at Hamburg equaling $35\frac{1}{2}$ cents, and $131\frac{1}{2}$ marks equaling £1 sterling, and get a cheaper rate. How much would this firm gain by drawing on London through Hamburg?

Ans. \$362.13+.

Explanation:

$\$5,000 \times \$4.88\frac{8}{9} = \$24,444.44+$, direct.

$\$5,000 \times 131\frac{1}{2} = 67,500$ marks.

Add $\frac{1}{2}\%$ com. 337.5

67,837.5

$67,837.5 \times 35\frac{1}{2} = \$24,082.31+$, indirect.

Cost direct exchange \$24,444.44+

Cost indirect exchange 24,082.31+

Gain

\$ 362.13

Ex. 6. A buyer from the Hague wished to pay \$30,000 for 530 B/C in Montgomery; by drawing through London and Hamburg, exchange on London being \$4.86=£1; £1=14 marks of Hamburg, and 6 marks =8 florins of the Netherlands; for how many florins will the draft have to be made?

Ans. 115,226.2 fl.

Explanation:

$$(1) \quad \$30,000 \div \$4.86 (\text{£}1) = \text{£}6,172.83 +.$$

$$\text{£}6,172.83 \times 14 = 86,419.7 \text{ marks.}$$

$$\frac{8}{6} \text{ of } 86,419.7 \text{ m.} = 115,226.2 \text{ flor.} \quad \text{Ans.}$$

$$(2) \quad \frac{30000}{486} \times 14 \times \frac{8}{6} = ?$$

AMERICAN, GERMAN AND FRENCH WEIGHTS, AND METRIC MEASUREMENTS.

The standard of weights for most all the European countries are based on the Metric system, and calculations are made in Kilograms; for convenience and brevity, generally expressed as Kilos (*Keeloze*).

Lengths for cotton staple are in millimeters, and length and strength are qualifying considerations in determining values, but not exclusive of other factors that go to make up the grades.

Millimeters in quotations for staple values are abbreviated thus—m/m.

A meter being about 39.37 inches, a m/m = 1000th part of it = .03937 inches, and for practical purposes may be expressed as .04 inches.

To determine the length of cotton staple measur-

ing, say, 28 m/m, by multiplying by .04 would = 1.12 inches, an approximation close to accuracy.

Quotations for staple cotton are given as definite lengths, and those intermediate, as 28 m/m; 28/30 m/m; 29 m/m; 29/30 m/m; 30 m/m; 30/32 m/m and so forth.

The expression "28/30," means 28 to 30 m/m in length; that is for cotton measuring 1.12 to 1.20 inches, equal to about $1\frac{1}{8}$ to $1\frac{1}{2}$ inches.

TABLE No. 8.

AMERICAN-GERMAN WEIGHTS.

Kilos to 2 decimals. 100 lbs. = 45.35 Kilos.

Lbs.	Kilos.	Lbs.	Kilos.	Lbs.	Kilos.
1	0.45	70	31.74	4,000	1,814.
2	0.90	80	36.28	5,000	2,267.50
3	1.36	90	40.81	6,000	2,721.
4	1.81	100	45.35	7,000	3,174.50
5	2.26	150	68.02	8,000	3,628.
6	2.72	200	90.70	9,000	4,081.50
7	3.17	300	136.05	10,000	4,535.
8	3.62	400	181.40	20,000	9,070.
9	4.08	500	226.75	30,000	13,605.
10	4.53	600	272.10	40,000	18,140.
15	6.80	700	317.45	50,000	22,675.
20	9.07	800	362.80	60,000	27,210.
30	13.60	900	408.15	70,000	31,745.
40	18.14	1,000	453.50	80,000	36,280.
50	22.67	2,000	907.	90,000	40,815.
60	27.21	3,000	1,360.50	100,000	45,350.

TABLE No. 9.

GERMAN-AMERICAN WEIGHTS.

Lbs. to 2 decimals. 45.35 Kilos = 100 lbs.

Kilos.	Lbs.	Kilos.	Lbs.	Kilos.	Lbs.
$\frac{1}{4}$	0.55	50	110.25	3,000	6,615.21
$\frac{1}{2}$	1.10	60	132.30	4,000	8,820.29
$\frac{3}{4}$	1.65	70	154.35	5,000	11,025.36
1	2.20	80	176.40	6,000	13,230.43
2	4.41	90	198.46	7,000	15,435.50
3	6.61	100	220.51	8,000	17,640.57
4	8.82	150	330.76	9,000	19,845.64
5	11.02	200	441.01	10,000	22,050.72
6	13.23	300	661.52	20,000	44,101.43
7	15.43	400	882.03	30,000	66,152.15
8	17.64	500	1,102.54	40,000	88,202.87
9	19.84	600	1,323.04	50,000	110,253.58
10	22.05	700	1,543.55	60,000	132,304.30
15	33.07	800	1,764.06	70,000	154,355.02
20	44.10	900	1,984.56	80,000	176,405.73
30	66.15	1,000	2,205.07	90,000	198,456.45
40	88.20	2,000	4,410.14	100,000	220,507.17

PROBLEMS.

Ex. 1. A man sold one B/C weighing 522 lbs.; what is its weight in Kilos?

Ans. 234.9 Kilos.

Explanation:

(1) 1 lb. (Table 8) = .45 Kilos.

522 lbs. = $522 \times .45 = 234.9$ Kilos. Ans.

(2) By the Table 2 lbs. = .90 Kilos.

20 lbs. = 9.07 Kilos.

500 lbs. = 226.75 Kilos.

522 lbs. = 236.72 Kilos.

The difference is caused by carrying the relative value of the Kilo to the lb. to only 2 decimal places. The true decimal to 4 places is .4535+; $.4535 \times 522 = 236.72+$ Kilos.

Ex. 2. What is the equivalent weight in Kilos of 5 B/C weighing respectively, 510, 532, 496, 501, 566 lbs? Give result by the Table.

Ans. 1,181.37 Kilos.

Ex. 3. Bought from a German 13 B/C which weighed 3482 Kilos at 9.80 cents a pound; what is the value of the cotton?

Ans. \$752.44+.

NOTE.—Get weights in lbs. from Table 9, and multiply by the price.

Ex. 4. A buyer offered 1 mark per Kilo for 3 B/C weighing 685 Kilos; what was the value in U. S. money?

Ans. \$163.03.

Explanation:

$685 \times 1\text{m.} = 685\text{m.}$

$685 \times \$.238 = \$163.03 = \text{Ans.}$

Ex. 5. What is the price per pound U. S. money in example 4?

Ans. 10.80 cts., nearly.

Explanation:

600 Kilos = 1,323.04 lbs.

80 Kilos = 176.40 lbs.

5 Kilos = 11.02 lbs.

685 Kilos = 1,510.46 lbs.

If 1,510.46 lbs. cost \$163.03; 1 lb. will cost $\frac{1}{1,510.46}$ of \$163.03 = $\$163.03 \div 1,510.40$ lbs. = .1080 cents, nearly.

Ex. 6. I sold a list of cotton weighing 1,260 Kilos, which I classed 28 m/m staple, at 110 pfennigs per Kilo; the out turn from this shipment showed the cotton to grade 30 m/m; what did I gain in dollars and cents by this latter gradation if each m/m extra length was equivalent to 10 pfennigs?

Ans. \$59.976.

Explanation:

1,260 Kilos \times 110 pfennigs = 138,600 pfgs.

138,600 \times \$.00238 = \$329.868, 28 m/m.

Gain on each m/m = 10 pfgs.

Out-turn showed gain of 2 m/m, then—

10 \times 2 pfgs. = 20 pfgs.

110 pfgs. + 20 pfgs. = 130 pfgs.

1,260 Kilos \times 130 = 163,800 pfgs.

163,800 \times .00238 = \$389,844, 30 m/m.

Value at 30 m/m = \$389,844

Value at 28 m/m = 329.868

Gain \$ 59,976 Ans.

NOTE.—A mark = 23.8 cents; a pfennig is $\frac{1}{100}$ of a mark, therefore = \$.00238.

Ex. 7. Prove otherwise Ex. 6 is correct.

Explanation:

1,000 Kilos = 2,205.07 lbs.

200 Kilos = 441.01 lbs.

60 Kilos = 132.30 lbs.

1,260 Kilos = 2,778.38 lbs.

$\$389.844 \div 2,778.38 \text{ lbs.} = \text{cost 1 lb., 30 m/m} =$
 $\$.1403+.$

$\$329.868 \div 2,778.38 \text{ lbs.} = \text{cost 1 lb., 28 m/m} =$
 $\$.1187+.$

$\$.1403 - \$.1187 = \$.0216 = \text{gain on 1 lb.}$

$2,778.38 \text{ lbs.} \times \$.1187 = \60.013 (a), Ans.

Ex. 8. What will be the value in francs for 150 B/C weighing 231.28 Kilos each, at 1 mark per Kilo?

Ans. 42,780.8+fr.

Ex. 9. Adams & Smith, Houston, Texas, shipped 1,000 B/C to Mitsui & Co., Osaka, Japan; the invoice weights were 235,820 Kilos; this cotton was sold for an average of $10\frac{7}{8}$ cents per lb. f. o. b. Houston; the draft was drawn through a New York bank for U. S. money; it drew on Mitsui & Co., in Yen; find face of draft in Yen.

Ans. 113,554.23+ Yen.

(a) The slight difference in the two answers is caused by not extending the decimals beyond 4 places.

NOTE.—Consult Tables 7 and 9 in solving problems 8 and 9 above.

COTTON QUOTATIONS—CALCULATIONS FOR PRIMARY BASIS PRICE.

The New Orleans and New York Cotton Exchanges being the only two dealing in future contracts in the United States, quotations for such futures on the Exchanges in Galveston, Houston, Little Rock, Memphis, Atlanta, Shreveport, Augusta, etc., are for the New Orleans and New York markets, but each of the other mentioned places quote spot cotton, this spot

price being made by committees especially elected or appointed for such business.

The duties requisite of these committees while not entirely identical, are so similar in many respects as to require no severance in a detailed description.

For illustration let us take the committee of the Houston Cotton Exchange, which consists of five appointed members, whose duty is to "furnish daily quotations" for spot cotton "based on Houston standards," that is, based on a type of cotton the samples of which the Exchange would recognize as good middling, strict middling, middling, etc. "In practice this committee consisting of three factors and two buyers, the quotations are based upon the sales that have been made during the day."

Houston and Galveston are rival markets and it has been frequently stated that quotations for these markets can not always be realized, from the fact of an active competition creating a tendency to over-quote the market, this statement arising from those selling or consigning cotton to those markets, but from buyers and factors operating in the two places such statements do not meet with full corroboration.

All exchanges do not have the same number of committeemen; notably, Memphis has seven, it being customary for four factors and three buyers one month and three factors and four buyers next month, etc., to serve; the chairman alternating. Little Rock has a committee of three, two buyers and one factor, who operate as a sub-committee. Each member "either from his own transactions or transactions of others, puts prices on a slip of paper," which "slips are turned over to the secretary of the exchange. If any

two agree, their figures are the price; if each is different the average of all the prices is used." Their actions are based on transactions in spot cotton that have occurred during the day.

The Augusta Exchange has six members, usually three buyers and three sellers, occasionally tying on a quotation; if three quote middling 9 cents and three $9\frac{1}{8}$, then the quotation would be posted 9— $9\frac{1}{8}$. Classification for this exchange is higher than any of the others. Augusta middling about the same as Liverpool good middling.

The Savannah Cotton Exchange rules seem to be indeterminate as to the number constituting the spot cotton quotation committee, but practically the committee is composed of both buyers and sellers. In determining the spot cotton valuations to be posted "a book is taken around each day one-half hour before the close, and each member of the committee writes in the book the quotation which he thinks should be established. The quotations are based on even-running grades, and a majority rules in determining what quotation shall be."

The Savannah Exchange has the Liverpool classification, and in comparing this with other markets, it is well to be remembered.

From these quotations wired over the country, and those carried daily in the papers, relative values for the market in any locality can be determined.

If cotton is quoted at $10\frac{7}{8}$ in New Orleans, what would be its relative value in Atlanta, if the freight rate between the two places is 40 cents per hundred on cotton?

Statement:

Value New Orleans	10.875=(10 $\frac{7}{8}$)
Less freight	.40

Atlanta valuation 10.475

This statement shows value in Atlanta with only freight off, but it is usual to deduct 3 per cent brokerage, the margin or profit desired, also.

Again, value in N. O.	10.875 cents
Freight	.40
Brokerage	.03
Expense and margin, say,	.12 $\frac{1}{2}$

Total off .55 $\frac{1}{2}$ = .555 cents

Buying Basis in Atlanta 10.320 cents

Buyers in Atlanta, then, would use about 10.30 as a basis on which to operate, if buying "on the market," that is, buying at a price it is worth at the time in the open market.

Spot buyers generally base their operations on the quotations for certain *future* months, instead basing on the spot quotations.

It should be remembered that *all quotations* for future months are for middling, and basing on spots, whether they be exchange quotations or quotations given by a correspondent, are also for the same grade.

Alternate months have become by the usage of the exchanges adopted as the governing months in ascertaining present spot values. If May is the present month then July would be a basic month on which to calculate a spot price; if for delivery in the more distant month, October would govern.

Suppose October is quoted at 10.85, and a spot dealer is willing in May to enter into contract to sell 1,000 bales to be delivered in that month at 50 points on October, then his basis price would be $10.85 + 50 = 11.35$. Were this transaction consummated in May, this dealer would protect it by a hedge and if, when near delivery time, the spot cotton had not been secured, he would buy it at the current price at the time, he being easy, as the hedge which is allowed to drift, had secured to him a protection, except in instances where the market had gone against him, then additional payment on his part would be required to keep the hedge vitalized.

Should this merchant who sold 1,000 bales at 11.35, find, in September, the market was 10.90 and for fear it might "go against him," (higher) offer 10 points on this month for middling, then a buyer buying for this operator, or for such a market quotation, at Atlanta, would calculate this way:

October New Orleans	10.90	cents
Ten points on	.10	

Value in New Orleans	11.00	cents
Freight	.40	
Brokerage	.03	
Margin and expenses	.12½	

Total off-set	.55½	.555
---------------	------	------

Buying basis in Atlanta = 10.445 cents.

If this Atlanta buyer can by reason of a reversal in the market, use 10.30 basis, and retain the ten points offered, he has been fortunate to that extent.

PROBLEMS.

Ex. 1. If the freight rate, Atlanta to New Orleans is 40 cents; from New Orleans to Liverpool 32 cents; what could be paid in Atlanta for M. cotton, if quoted in Liverpool at 5.83d., brokerage 3, and margin and expense 15 points?

Ans. 10.76.

Explanation:

Value in Liverpool, $5.83 \times \$.02 =$	11.66 cents
Freight	.72
Brokerage	.03
Profit and expense	.15
	<hr/>
Total off-set	.90
	<hr/>
Total off-set	10.76

NOTE.—One pence $= \$.02 + = 2 +$ cents.

Ex. 2. Freight,* Memphis, Tenn., to Bremen being 68 cents; what will be my basis in Memphis, if I wish to reserve a margin, expense and profit, of $18\frac{3}{4}$ cents, and cotton quoted in Bremen at 51 pfennigs?

Ans. $11\frac{1}{4}$.

Explanation: (See note, page 264.)

$51 \times \$.00238 =$	12.1380 cents
Freight*	.68
Brokerage	.03
Margin and expense $18\frac{3}{4} =$.1875
	<hr/>
Total offset	.8975
	<hr/>
Memphis basis	11.2405 cents.

*Freight rates are assumed approximations.

The preceding will suffice to show *how* to make the estimate for a base when *all* the charges are known.

For foreign account all the charges are not given for the reason shipments of this character are generally made subject to such stipulations for expenses as may be stated in the sale as agreed to by both parties.

Parties on this side selling to European consumers usually have a representative there to whom shipments are entrusted for supervision, and such charges as receiving, warehousing, delivering, commission, mending, sampling, tare, 5 per cent excess insurance, cost of exchange, etc., are some or all added to the lists already stated in the problems.

If the shipments of cotton upon receipt and examination do not conform identically to the class guarantee, and buyer and seller can not adjust it themselves, the matter is referred to arbitration, when so adjusted, further charges accrue.

The prices quoted for foreign markets in newspapers, showing the value of spots, are the prices that *might* be obtained, after payment of the accustomed charges, hence it is not definite that such quotations can be obtained at all times for cotton delivered at the moment.

COMPARATIVE VALUES OF UNITED STATES AND FOREIGN FRACTIONAL MONIES.

The following table will be found of service in showing the comparative values of foreign monies compared with those of the United States.

It exhibits the values of the minor divisions of coin-

age, enabling the student to determine at a glance the comparative values of such money with ours, and with such table, operations requiring the introduction of foreign money in the computations, are made easier.

The coinage valuation of the money of Germany, France and England are given only, as these countries consume the greatest percentage of our cotton crops.

The figures in the first row show the comparative value of 1 cent, 1 pfennig, 1 centime, and 1 penny, to a dollar.

The rows of figures, under their proper heading, show how many of one kind it takes to equal another of a different kind.

To know how many pfennigs equal 5 cents, read the top line *crosswise* and it shows 5 cents equal 21.01 pfennigs, 25.91 centimes, and ~~25~~²⁴ pence.

In like manner to ascertain the equivalent number of pfennigs or centimes for any number of cents from 5 to 16, find the number in cents and opposite on the same line will be found the number desired in foreign money.

Excepting the English coinage, all the others quoted are in percentages; that is, it takes 100 cents to make a dollar; 100 pfennigs to make a mark; 100 centimes to make a franc, therefore fractions of a dollar, mark and franc can be expressed as a decimal of it.

To write fifty marks and twenty pfennigs, write 50.20 m.; two hundred and sixteen marks and 38 pfennigs, write 216.38 m.; seventy-five francs and sixteen centimes, write 75.16 fr.

To get a clear idea of the comparative values, let

it be stated that cotton is worth $7\frac{1}{2}$ cents a pound; what is its value in centimes? (38.87); what in pfennigs? (31.51); what in pence? (3.70.) (See the table.)

For greater accuracy, the German and French values have been carried to 4 decimal places, with a point (.) dividing the decimal, and instead of writing the decimal as .6353 of a mark, it is written as 63.53 pfennigs, with the same form for the French expressions—the penny is almost twice the value of one cent.

Quotations for the German market are in pfennigs, each pfennig representing $\frac{1}{2}$ Kilo in weight, equal to $1\frac{1}{16}$ pounds; while for France they are given in francs, and for the weight of 50 Kilos, or 110 pounds.

Quotations for foreign cotton are for net weight, the tare usually reckoned at 6% from gross weight. (See Bremen Cotton Exchange rules, page 117.)

TABLE NO. 10.

United States.	Germany.	France.	England.
Cents. -	Pfennigs.	Centimes.	Pence.
\$.01	\$.00238	\$.00193	\$.02+
1	4.20	5.18	0.50
2	8.40	10.36	1.00
3	12.60	15.54	1.50
4	16.81	20.73	2.00
5	21.01	25.91	2.41
$5\frac{1}{8}$	21.53	26.55	2.53
$5\frac{1}{4}$	22.06	27.20	2.59
$5\frac{3}{8}$	22.58	27.85	2.65
$5\frac{1}{2}$	23.11	28.50	2.71

TABLE NO. 10—*Continued.*

United States.	Germany.	France.	England.
Cents.	Pfennigs.	Centimes.	Pence.
5 $\frac{5}{8}$	23.63	29.15	2.77
5 $\frac{3}{4}$	24.16	29.79	2.83
5 $\frac{7}{8}$	24.68	30.44	2.90
6	25.21	31.10	2.96
6 $\frac{1}{8}$	25.73	31.75	3.02
6 $\frac{1}{4}$	26.26	32.39	3.08
6 $\frac{3}{8}$	26.79	33.04	3.14
6 $\frac{1}{2}$	27.31	33.69	3.20
6 $\frac{5}{8}$	27.84	34.34	3.27
6 $\frac{3}{4}$	28.36	34.89	3.33
6 $\frac{7}{8}$	28.89	35.64	3.39
7	29.41	36.27	3.45
7 $\frac{1}{8}$	29.94	36.92	3.51
7 $\frac{1}{4}$	30.46	37.57	3.57
7 $\frac{3}{8}$	30.99	38.22	3.64
7 $\frac{1}{2}$	31.51	38.87	3.70
7 $\frac{5}{8}$	32.04	39.52	3.76
7 $\frac{3}{4}$	31.55	40.15	3.82
7 $\frac{7}{8}$	33.07	40.80	3.88
8	33.61	41.45	3.95
8 $\frac{1}{8}$	34.12	42.10	4.01
8 $\frac{1}{4}$	34.65	42.75	4.07
8 $\frac{3}{8}$	35.17	43.39	4.13
8 $\frac{1}{2}$	35.69	44.04	4.19
8 $\frac{5}{8}$	36.22	44.69	4.25
8 $\frac{3}{4}$	36.75	45.33	4.31
8 $\frac{7}{8}$	37.27	45.98	4.38
9	37.82	46.63	4.44
9 $\frac{1}{8}$	38.32	47.27	4.50

TABLE No. 10—*Continued.*

United States.	Germany.	France.	England.
Cents.	Pfennigs.	Centimes.	Pence.
9 $\frac{1}{4}$	38.85	47.92	4.56
9 $\frac{3}{8}$	39.37	48.56	4.62
9 $\frac{1}{2}$	39.90	49.21	4.68
9 $\frac{5}{8}$	40.43	49.86	4.75
9 $\frac{3}{4}$	40.95	50.50	4.81
9 $\frac{7}{8}$	41.47	51.15	4.87
10	42.02	51.81	4.93
10 $\frac{1}{8}$	42.53	52.45	4.99
10 $\frac{1}{4}$	43.05	53.10	5.05
10 $\frac{3}{8}$	43.57	54.75	5.12
10 $\frac{1}{2}$	44.10	55.39	5.18
10 $\frac{5}{8}$	44.62	56.04	5.24
10 $\frac{3}{4}$	45.15	55.69	5.30
10 $\frac{7}{8}$	45.67	56.34	5.36
11	46.22	56.99	5.42
11 $\frac{1}{8}$	46.73	57.64	5.49
11 $\frac{1}{4}$	47.25	58.28	5.55
11 $\frac{3}{8}$	47.77	58.93	5.61
11 $\frac{1}{2}$	48.30	59.58	5.67
11 $\frac{5}{8}$	48.83	60.22	5.73
11 $\frac{3}{4}$	49.35	60.87	5.79
11 $\frac{7}{8}$	49.87	61.52	5.86
12	50.42	62.17	5.91
12 $\frac{1}{8}$	50.93	62.82	5.98
12 $\frac{1}{4}$	51.45	63.47	6.04
12 $\frac{3}{8}$	51.97	64.11	6.10
12 $\frac{1}{2}$	52.50	64.76	6.16
12 $\frac{5}{8}$	53.03	65.41	6.22
12 $\frac{3}{4}$	53.55	66.05	6.29

TABLE NO. 10—*Continued.*

United States.	Germany.	France.	England.
Cents.	Pfennigs.	Centimes.	Pence.
12 $\frac{7}{8}$	54.07	66.70	6.35
13	54.62	67.35	6.41
13 $\frac{1}{8}$	55.13	67.99	6.47
13 $\frac{1}{4}$	55.65	68.64	6.53
13 $\frac{3}{8}$	56.17	69.29	6.60
13 $\frac{1}{2}$	56.70	69.93	6.66
13 $\frac{5}{8}$	57.22	70.58	6.72
13 $\frac{3}{4}$	57.75	71.23	6.78
13 $\frac{7}{8}$	58.27	71.89	6.84
14	58.82	72.54	6.90
14 $\frac{1}{8}$	59.33	73.18	6.96
14 $\frac{1}{4}$	59.85	73.81	7.03
14 $\frac{3}{8}$	60.37	74.46	7.09
14 $\frac{1}{2}$	60.90	75.13	7.15
14 $\frac{5}{8}$	61.42	75.76	7.21
14 $\frac{3}{4}$	61.95	76.42	7.27
14 $\frac{7}{8}$	62.48	77.07	7.33
15	63.03	77.72	7.40
15 $\frac{1}{8}$	63.53	78.37	7.46
15 $\frac{1}{4}$	64.05	79.02	7.52
15 $\frac{3}{8}$	64.57	79.66	7.58
15 $\frac{1}{2}$	65.10	80.31	7.64
15 $\frac{5}{8}$	65.63	80.96	7.70
15 $\frac{3}{4}$	66.15	81.60	7.77
15 $\frac{7}{8}$	66.68	82.25	7.83
16	67.23	82.90	7.89

These values are calculated on the basis of the United States Mint valuations—see Table No. 7.

PROBLEMS.

Ex. 1. If cotton is quoted on the Havre Bourse (Exchange) at 72 for M., what is the value in New Orleans, freight being 28?

Ans. 12.35 cents.

NOTE.—This quotation is 72 francs for 50 Kilos, 110 pounds; freight rate is 28 cents per hundred pounds.

Explanation:

$$1 \text{ fr.} = \$.193; 72 \text{ fr.} = 72 \times .193 = \$13.896.$$

$$\$13.896 \div 110 = 12.63 \text{ cents per pound.}$$

$$12.63 - 28 = 12.35, \text{ value in New Orleans, Ans.}$$

This value is for the cotton without other charges than freight and profit deducted.

Ex. 2. A Galveston merchant sold 100 B/C (50,000 lbs.) f. o. b. Manchester, England, at 6d; what is the value of the cotton at Galveston in U. S. money, and what price in cents per pound, exchange quoted at 4.80, and freight at 30 cents a hundred?

Ans. Total value \$5,490; price per pound, 10.98c.

Explanation:

(1)	Total gross weight	50,000 lbs.
	Less 6% tare	3,000 lbs.

Net weight 47,000 lbs.

$$47,000 \text{ lbs.} \times 6 \text{ d.} = 282,000 \text{ d.}$$

$$282,000 \div 12 \text{ d.} = 23,500 \text{ s.}$$

$$23,500 \div 20 \text{ s.} = 1,175 \text{ £.}$$

Freight on 50,000 lbs. at 30 cents per hundred = \$150.

$$\$150 \div 4.80 = 31\frac{1}{4} \text{ £'s} = \text{£}31, 5 \text{ s.}$$

$$\text{£}1,175 - 31\frac{1}{4} = \text{£}1,143\frac{3}{4}.$$

$$1,143\frac{3}{4} \times 4.80 = \$5,490. \text{ Total value.}$$

$\$5,490 \div 50,000 \text{ lbs.} = 10.98 \text{ cents} = \text{Galveston price.}$

$$\begin{array}{rcl}
 (2) & 6 \text{ d.} & = 12 \text{ cents} = 12.00 \\
 & \text{Less } 6\% & = .72 \\
 & \text{Less freight } .30 & = 1.02
 \end{array}$$

Galveston price 10.98 cents, Ans.
 50,000 lbs. $\times 10.98 = \$5,490$ Total value.
 Briefly, 50,000—3,000=47,000 at 6 d. = £1,175, 0 s.
 Less freight at 30 cents = 31, 5 s.

Net value £1,143.15 s.
 $\text{£}1,143, 15 \text{ s.} \times 4.90 = \$5,490 \div 50,000 = 10.98 \text{c.}$

Ex. 3. Cotton is quoted on the Bremen Exchange at 55 pfennigs; what is value in cents?

Ans. 11.905 cents.

NOTE.—*The quotation is for $\frac{1}{2}$ Kilo = $1\frac{1}{10}$ lbs.*

Explanation: $\frac{1}{2}$ Kilo ($1\frac{1}{10}$ lbs.) = 55 pfennigs.

If $1\frac{1}{10}$ lbs. = 55 pfennigs, 1 lb. will = $1\frac{1}{10}$ of 55 p.
 $55 \div 1.1 = 50 \text{ p.}$

4.20 p. = 1 cent. (See Table.)

50 p. $\div 4.20 = 11.905$ cents. Ans., nearly.

Ex. 4. What would be the value in Dallas, Texas, for cotton quoted in example 3, if freight is 85 and tare 6%?

Ans. 10.34½ cents.

Explanation:

Bremen value	11.905 cents
6% of 11.905=	.71
Freight	.85

Total tare and freight	1.560
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Dallas equivalent value	10.345 cents.
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Ex. 5. What is the value in U. S. money if the German market is quoted at 54.6 pfennigs? (See Table.)

Ans. 13 cents.

Ex. 6. Brokerage 3, commission 2, tare 6, other expenses and profits 12, freight 65, what should a buyer in Macon, Ga., offer as a basis for cotton based on the quotation in example 5?

Ans. 11.40 cents.

Explanation:

54.6 p. =(See Table.)	13.00 cents
6% tare =	.78
Brokerage	.03
Commission	.02
Freight	.65
Expenses and profit	.12
	—
Total offset	1.60
	<hr/>
	11.40

This buyer would offer about 11.40, as M. base price, provided he had his cotton sold and protected, or if the market showed stability, with good indications for an advance, he might offer this figure without a hedge.

As previously stated, offsets given in the problems here, are only approximations, but it serves to illustrate the manner in which calculations are to be made to ascertain a base.

The total amount of charges to come off the quoted market, or premiums to be added, are usually stated and agreed upon by both buyer and seller,

when trade is made, especially when for foreign account.

A buyer on a foreign market might offer a certain price f. o. b. Liverpool, Bremen or Havre, as the case should be, then the *seller* would determine the expenses to accrue to himself before he could land the cotton there, which would be such charges as freight, clerical assistance, exchange, marine insurance, cablegrams, and whatever margin he desired to make or could make, and arbitration fees, etc.

Ex. 7. A bale of cotton weighing 520 lbs. was sold for 10 cents a pound; what was its value in dollars and cents, marks and pfennigs, francs and centimes, and English money? (See Table.)

Ans. \$52.00; Marks, 218.50; Francs, 269.42; £10, 13 s., 8 d.

Explanation: (See Table.)

Multiply weight of bale by 42.02 p. $= 520 \times 42.02 = 21,850.4$ p.

$21,850.4 \div 100 = 218.50 +$ marks. Ans.

In like manner for the French weights, multiply $51.81c. \times 520 = 26,941.2$ centimes $\div 100 = 269.41 +$ Francs, Ans.

520 lbs. $\times 3.93$ pence $= 2,563.6$ pence.

$2,563.6 \div 240$ (number of pence in a £) $= £10.6816 +$
20 s.

s. 13.6320

12 d.

d. 7.5840

The answer is £10, 13 s., 8 d.

From the preceding a rule can be formed.

To find the value of Marks, Francs, and all monies with fractional percentages.

RULE.—Multiply the total weight of the cotton by the price in pfennigs or centimes, divide the product by 100; the answer will be in Marks and Francs, with decimals as pfennings or centimes, should the division not come out even.

To find the value in pounds, shillings and pence.

RULE.—Multiply the weight of the cotton in pence, divide the product by 240, (the number of pence in a pound), the quotient will be pounds, and decimals of a pound, which decimal reduce to shillings and pence by multiplying it by 20 s. first, cutting off the left whole number as shillings, multiplying the resulting decimal by 12 d., the left whole number being the number of pence.

Ex. 8. What will be the value of 2 B/C, 1040 lbs. at $8\frac{1}{2}$ cents a pound U. S., French, German and English money?

Ans., \$88.40; Marks, 371.18; Francs, 458.02; £18, 3 s., 4 d.

Ex. 9. John Anson sold 15 B/C weighing 7,830 lbs. at $11\frac{3}{8}$ cents; what is its value in dollars and cents, marks and pfennigs, francs and centimes, pounds, shillings and pence?

Ans., \$890.66 $\frac{1}{4}$; M., 3,740.39; F., 4,614.22; £, 183, 0 s., 5 d.

NOTE.—See Table No. 10 for comparative values.

Explanation:

Multiply $11\frac{3}{8}$ cents by 7,830 lbs. = \$890.66 $\frac{1}{4}$.

Multiply 47.77 p. \times 7,830 lbs. = 374,039.10 \div 100 =

$3,740.39 + m.; 58.93 \text{ c.} \times 7,830 = 461,421.9 \text{ c.} \div 100 = 4,614.22$, nearly.

For conversion of U. S. money to Sterling, see examples in preceding portion of this work, "*Exchange on England.*" The comparative values of the Marks and Francs in the answer are slightly too small as to the number of pfennigs and centimes, owing to the fact of the Table showing decimals only to 4 places.

In calculating the Table for pfennigs, centimes, etc., the basis for such were the U. S. mint valuations, that is:

- 1 Mark = 23.8 cents.
- 1 Dollar = 4.20 marks.
- 1 Franc = 19.3 cents.
- 1 Dollar = $5.18\frac{1}{8}$ francs.
- 1 Penny = 2 cents, nearly.
- 1 Dollar = 4 shillings and 1 penny.
- 1 £ = \$4.866 $\frac{1}{2}$.

In example 9, let it be required to find the number of dollars in 3,740.39 marks, the process is performed by dividing by 4.20 m. as it takes that many to make one dollar; for the 4,614.22 francs, divide by $5.18\frac{1}{8}$ (5.18125), the result will be in dollars and cents.

It should be remembered that the Mint valuations for comparative values are stable, while those for commercial purposes are variable, hence the different rates quoted by banking institutions for exchanging money of one nation for that of another.

Should a cotton merchant receive a 60-day draft on Paris for his cotton, and one bank offer to exchange the French to U. S. money for $5.18\frac{1}{8}$ francs to the dollar, and another bank offer him $5.18\frac{1}{4}$ francs to

the dollar, it is evident the first bank offered the cheaper exchange for the merchant, as he could get more dollars for his draft.

Rates of exchange may vary widely at different times, but only when abnormal circumstances act as exciting causes.

The variation is quite small when commercial transactions are moving normally.

TABLE NO. 11.

Dates of Earliest Killing Frosts in the Cotton States.

(U. S. Weather Bureau Reports.)

State	Locality	1907-08	1906-07	1905-06	1905-04	1904-03
N. Carolina	Charlotte	Nov. 14	Oct. 12	Nov. 11	Oct. 16	Nov. 27
N. Carolina	Rockingham	Nov. 28	Oct. 11	Nov. 12	Nov. 15	Oct. 28
N. Carolina	Raliegh	Oct. 22	Oct. 12	Nov. 15	Nov. 15	Nov. 28
N. Carolina	Goldsboro	Oct. 22	Oct. 12	Nov. 12	Nov. 7	Oct. 27
S. Carolina	Charleston	Nov. 14	Nov. 16	Dec. 11	Dec. 13	Nov. 28
S. Carolina	Columbia	Oct. 29	Oct. 29	Nov. 22	Nov. 15	Nov. 28
Georgia	Atlanta	Oct. 14	Oct. 11	Oct. 22	Nov. 7	Oct. 25
Georgia	Augusta	Nov. 14	Oct. 29	Nov. 12	Nov. 15	Oct. 28
Georgia	Savannah	Nov. 14	Nov. 13	Dec. 4	Dec. 13	Nov. 28
Georgia	Columbus	Nov. 13	Nov. 13	Nov. 23	Nov. 14	Nov. 27
Georgia	Rome	Oct. 14	Oct. 11	Oct. 22	Nov. 14	Nov. 28
Florida	Jacksonville	Dec. 5	Nov. 13		Dec. 29	Nov. 28
Florida	Pensacola	Dec. 5	Dec. 23	Dec. 5	Dec. 18	Nov. 27
Alabama	Eufaula	Nov. 14	Oct. 29	Nov. 23	Nov. 14	Nov. 28
Alabama	Mobile		Dec. 24	Dec. 4	Dec. 16	Nov. 19
Alabama	Montgomery	Nov. 13	Nov. 13	Nov. 30	Nov. 14	Nov. 27
Mississippi	Vicksburg	Nov. 13	Nov. 13	Nov. 30	Nov. 13	Nov. 19
Mississippi	Greenville	Oct. 14	Oct. 11	Nov. 2	Nov. 15	Nov. 19
Louisiana	New Orleans		Dec. 24	Dec. 5	Dec. 16	Nov. 19
Louisiana	Shreveport	Nov. 12	Nov. 1	Nov. 30	Nov. 13	Nov. 19
Texas	Galveston					
Texas	Palestine	Nov. 12	Nov. 22	Dec. 3	Nov. 11	Nov. 19
Texas	San Antonio	Nov. 13	Nov. 20	Dec. 4	Nov. 12	Nov. 18
Texas	Ft. Worth	Nov. 11	Nov. 1	Nov. 29	Nov. 11	Nov. 18
Arkansas	Little Rock	Nov. 12	Nov. 22	Nov. 30	Nov. 13	Nov. 18
Arkansas	Ft. Smith	Nov. 11	Oct. 31	Nov. 29	Nov. 13	Nov. 19
Tennessee	Memphis	Nov. 11	Nov. 13	Nov. 30	Nov. 13	Nov. 18
Tennessee	Nashville	Oct. 29	Oct. 11	Nov. 22	Nov. 14	Nov. 25
Tennessee	Chattanooga	Nov. 13	Oct. 11	Nov. 12	Nov. 15	Nov. 28

TABLE NO. 12.

Number of Active and Idle Ginneries, and Average Number of Running Bales, Excluding Linters, Ginned per Active Establishment, by States: 1904 to 1908.

State	Growth year	Number of Ginneries			Average number of bales ginned per active establishment
		Total	Active	Idle	
United States-----	1908	30,345	27,598	2,747	478
	1907	30,822	27,592	3,230	404
	1906	31,325	28,709	2,616	457
	1905	31,441	29,038	2,403	366
	1904	32,855	30,337	2,518	448
Alabama-----	1908	3,762	3,490	272	384
	1907	3,857	3,460	397	324
	1906	3,984	3,658	326	343
	1905	4,020	3,736	284	333
	1904	4,239	3,912	327	374
Arkansas-----	1908	2,340	2,128	212	471
	1907	2,381	2,115	266	357
	1906	2,487	2,312	175	389
	1905	2,521	2,306	215	260
	1904	2,631	2,451	180	363
Florida-----	1908	301	258	43	271
	1907	304	259	45	219
	1906	309	276	33	223
	1905	311	292	19	270
	1904	311	279	32	314
Georgia-----	1908	4,950	4,475	475	442
	1907	5,106	4,567	539	408
	1906	5,135	4,586	549	357
	1905	5,185	4,779	406	362
	1904	5,465	4,980	485	395
Louisiana-----	1908	2,011	1,708	303	280
	1907	2,125	1,874	251	364
	1906	2,225	2,076	149	471
	1905	2,254	2,079	175	252
	1904	2,396	2,240	156	495
Mississippi-----	1908	3,896	3,491	405	464
	1907	3,987	3,541	446	408
	1906	4,152	3,780	372	393
	1905	4,215	3,885	330	801
	1904	4,442	4,084	358	435
North Carolina-----	1908	3,034	2,788	246	245
	1907	3,039	2,754	285	232
	1906	3,089	2,792	247	219
	1905	3,044	2,834	210	230
	1904	3,183	2,947	236	254

TABLE NO. 12—Continued.

State	Growth year	Number of Ginneries			Average number of bales ginned per active establishment
		Total	Active	Idle	
Oklahoma -----	1908	1,057	987	70	722
	1907	1,051	971	80	897
	1906	987	939	48	950
	1905	891	848	43	809
	1904	848	809	39	1,017
South Carolina -----	1908	3,481	3,241	240	375
	1907	3,437	3,192	245	365
	1906	3,394	3,146	248	290
	1905	3,392	3,170	222	351
	1904	3,453	3,247	206	367
Tennessee -----	1908	761	657	104	509
	1907	784	673	111	396
	1906	833	702	131	417
	1905	847	734	113	367
	1904	894	762	132	421
Texas -----	1908	4,507	4,169	338	887
	1907	4,501	3,995	506	563
	1906	4,532	4,232	300	952
	1905	4,523	4,165	358	604
	1904	4,753	4,416	337	711
All other states* -----	1908	245	206	39	357
	1907	250	191	59	241
	1906	248	210	38	325
	1905	238	210	28	273
	1904	240	210	30	327

*Includes Arizona, Kansas, Kentucky, Missouri, New Mexico, and Virginia.

TABLE NO. 13.
Comparative Summary of Cotton Ginned to Specified Dates and to End of Season, Showing Percentages, also to the Corresponding Dates.
Running Bales, Counting Round as Half Bales, and Excluding Linters.

	Growth year	Sep. 1	Sep. 25	Oct. 18	Nov. 1	Nov. 14	Dec. 1	Dec. 13	Jan. 1	Jan. 16	Total Crop
	1908	402,229	2,590,639	6,296,166	8,191,557	9,595,809	11,008,661	11,904,269	12,465,298	12,666,208	13,086,005
Percentage		3.1	13.9	48.1	62.6	73.3	84.1	91.0	95.3	96.8	100
	1907	200,278	1,532,602	4,420,258	6,128,562	7,300,665	8,343,896	9,284,070	9,951,505	10,339,551	11,057,822
Percentage		1.8	13.9	.40	55.4	66	75.5	84	90	95.5	100
	1906	407,551	2,057,283	4,931,621	6,906,395	8,562,242	10,027,863	11,112,789	11,741,089	12,176,199	12,983,201
Percentage		3.1	15.9	38.0	53.2	65.9	77.2	85.6	90.4	93.8	100
	1905	476,655	2,355,716	4,990,566	6,457,595	7,501,180	8,689,663	9,297,819	9,725,426	9,989,634	10,495,105
Percentage		4.5	22.4	47.6	61.5	71.5	82.8	88.6	92.7	95.2	100
	1904	374,821		6,417,894		9,786,646		11,971,477		12,767,600	13,451,339
Percentage		2.8		47.7		72.8		89.0		94.9	100
	1903	17,302		3,706,248		6,815,162		8,526,244		9,485,527	9,819,969
Percentage		0.2		37.7		69.4		86.8		96.6	100
	1902			5,683,006				8,905,505			10,588,250
Percentage				53.7				84.1			100

TABLE NO. 14.

No. Cotton Mills in U. S. Showing No. of Spindles, Bales Consumed, and Stocks in Each State.
(U. S. Census Bureau.)

1907— State	No. Mills	No. active spindles	Cotton taken for consumption	Cotton Con- sumed	Mill stock Aug. 31
Alabama -----	74	876,944	247,476	239,149	29,946
Arkansas -----	74	12,972	4,762	4,411	825
California -----	15	12,284	18,219	15,997	3,590
Connecticut -----	86	1,215,435	153,403	147,450	49,060
Georgia -----	149	1,610,004	545,385	521,777	62,400
Illinois -----	37	31,488	14,261	13,412	1,575
Indiana -----	21	122,568	29,675	27,754	4,445
Kentucky -----	16	82,764	27,001	25,985	5,220
Louisiana -----	14	68,724	17,404	17,050	799
Maine -----	35	966,864	166,456	157,152	37,616
Maryland -----	16	142,384	65,960	64,998	4,445
Massachusetts -----	204	9,097,236	1,365,628	1,253,856	367,098
Mississippi -----	26	162,696	38,854	37,929	3,491
Missouri -----	39	14,416	10,125	9,491	1,168
New Hampshire -----	44	1,307,357	306,783	277,941	82,696
New Jersey -----	28	425,791	46,845	48,294	9,217
New York -----	128	900,506	206,843	191,884	37,797
North Carolina -----	276	2,604,444	750,400	710,275	84,542
Ohio -----	31	23,744	23,744	24,453	8,564
Pennsylvania -----	132	263,205	89,476	86,825	12,933
Rhode Island -----	74	2,218,905	245,266	223,035	76,250
South Carolina -----	145	3,502,036	709,728	668,883	96,487
Tennessee -----	35	230,358	65,185	62,522	10,508
Texas -----	52	103,992	41,923	38,602	5,543
Vermont -----	15	102,264	12,788	12,758	1,342
Virginia -----	29	250,758	72,470	68,668	9,085
All other States -----	92	44,340	35,879	32,342	6,798
U. S. -----	1,830	26,375,191	5,321,203	4,984,936	1,016,738

TABLE NO. 15.

Production, Total Acreage, Total Estimated Value, Average Net Weight of Bale, Value of Lint by the Pound, From 1790 to 1906.

This Statement Shows the Running Bales as They Come from the Press, Round Bales Being Counted as Halves. The Values Given Are For Cotton, Including Linters, and Not For the Value of Cotton Seed Products.

(Linters, short fiber taken from the seed at the oil mills.)

State	Total acreage	Total bales	Total value	Net Wt.	Av. price
1908	32,444,000	13,432,131	\$588,814,828	484	9.2
1907	31,311,000	11,325,882	613,630,436	480	11.5
1906	28,686,000	13,305,265	640,311,538	490	10.0
1905	26,117,153	10,725,602	556,833,817	482	11.1
1904	30,053,739	13,697,310	561,100,386	478	9.0
1903	28,016,893	10,015,721	576,499,824	480	12.2
1902	27,114,103	10,784,473	421,687,941	481	8.8
1901	27,220,414	9,748,546	-----	489	8.1
1900	25,758,139	10,245,602	-----	480	9.3
1899	24,275,101	9,345,391	323,758,171	476	7.6
1898	24,967,295	11,189,205	314,263,615	489	4.9
1897	24,319,584	10,897,857	356,294,209	482	5.6
1896	23,273,209	8,532,705	275,718,223	477	7.3
1895	20,184,808	7,161,094	259,468,107	477	8.2
1894	23,687,950	9,901,251	220,441,452	484	5.9
1893	19,525,000	7,493,000	250,502,928	474	7.5
1892	-----	-----	-----	475	8.4
1892	-----	6,700,365	267,344,564	475	8.4
1891	-----	9,035,379	311,982,601	473	7.3
1890	-----	8,652,597	351,970,341	473	8.6
1889	20,175,270	7,472,511	296,464,401	478	11.5
1888	-----	6,938,290	281,312,968	477	10.7
1887	-----	7,046,833	279,724,037	467	10.3
1886	-----	6,505,087	247,140,771	461	10.3
1885	-----	6,575,691	258,786,319	463	9.4
1884	-----	5,706,165	241,484,908	460	10.5
1883	-----	5,713,200	237,554,856	462	10.6
1882	-----	6,949,756	323,372,147	470	10.6
1881	-----	5,456,048	245,522,160	450	12.2
1880	-----	6,605,750	297,787,210	460	11.3
1879	14,480,019	5,755,359	266,519,165	454	12.0
1878	-----	5,074,155	185,988,077	447	10.8
1877	-----	4,773,865	225,565,121	450	11.3
1876	-----	4,474,069	194,890,446	440	11.7
1875	-----	4,632,313	228,298,914	444	13.0
1874	-----	3,832,991	219,247,085	440	15.0
1873	-----	4,170,388	261,082,970	441	17.0
1872	-----	3,930,508	287,949,016	444	18.2
1871	-----	2,974,351	235,857,111	443	20.5
1870	-----	4,352,317	232,770,618	442	17.0
1869	-----	3,011,996	218,670,910	440	24.0
1868	-----	2,366,467	-----	444	29.0
1867	-----	2,519,554	-----	445	24.9
1866	-----	2,097,254	-----	444	31.6
1865	-----	2,269,316	-----	441	43.2
1864	-----	300,000	-----	477	83.4
1863	-----	450,000	-----	477	101.5

TABLE NO. 15—Continued.

State	Total acreage	Total bales	Total value	Net Wt.	Av. price
1862		1,600,000		477	67.2
1861		4,500,000		477	31.3
1860		3,849,469		477	13.0
1859		5,387,052		461	11.0
1858		4,018,914		447	12.1
1857		3,257,339		442	12.2
1856		3,093,737		444	13.5
1855		3,665,557		420	10.3
1854		2,982,634		434	10.4
1853		3,074,979		430	11.0
1852		3,416,214		438	11.0
1851		3,126,310		428	9.5
1850		2,454,442		416	12.1
1849		2,469,093		429	12.3
1848		2,866,938		436	7.5
1847		2,439,786		417	8.0
1846		1,778,651		431	11.2
1845		2,100,537		411	7.9
1844		2,394,503		415	5.6
1843		2,030,409		412	7.7
1842		2,378,875		409	7.2
1841		1,683,574		397	7.8
1840		1,634,954		394	9.5
1839		2,063,915		383	8.9
1838		1,360,532		384	13.4
1837		1,801,497		379	10.1
1836		1,423,930		379	13.2
1835		1,360,725		373	16.5
1834		1,253,406		367	17.4
1833		1,225,895		363	12.9
1832		1,114,286		350	12.3
1831		1,069,444		360	9.4
1830		1,026,393		341	9.7
1829		1,076,696		339	10.0
1828		953,079		341	9.9
1827		805,970		335	10.3
1826		1,057,402		331	9.3
1825		817,308		312	12.2
1824		751,748		286	18.4
1823		656,028		282	14.7
1822		704,698		298	11.4
1821		636,042		283	14.3
1820		575,540		278	14.3
1819		632,576		264	17.0
1818		446,429		280	24.0
1817		465,950		279	34.0
1816		439,716		282	26.0
1815		369,004		271	29.0
1814		254,545		275	21.0
1813		304,878		246	15.5
1812		304,878		246	12.5
1811		325,203		246	10.5
1810		286,195		297	15.5
1809		328,000		250	16.0
1808		334,821		224	16.0
1807		289,855		276	19.0
1806		285,714		280	21.5

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TABLE NO. 15—Continued.

State	Total acreage	Total bales	Total value	Net Wt.	Av. price
1805 -----		304,348	-----	230	22.0
1804 -----		261,044	-----	249	23.0
1803 -----		222,222	-----	270	20.0
1802 -----		231,092	-----	238	19.0
1801 -----		210,526	-----	228	19.0
1800 -----		153,509	-----	228	44.0
1799 -----		88,889	-----	225	28.0
1798 -----		66,667	-----	225	44.0
1797 -----		48,889	-----	225	39.0
1796 -----		44,444	-----	225	34.0
1795 -----		35,556	-----	225	36.5
1794 -----		35,556	-----	225	36.5
1793 -----		22,222	-----	225	33.0
1792 -----		13,333	-----	225	32.0
1791 -----		8,889	-----	225	29.0
1790 -----		6,667	-----	225	26.0

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